

The opinion in support of the decision being entered today was not written for publication  
and is not binding precedent of the Board

Paper No. 121

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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ALAIN LAGRANGE, BERNADETTE LUPPI, AND ALEX JUNINO  
Junior Party<sup>1</sup>,

v.

GUENTHER KONRAD, IDUNA MATZIK, AND EDGAR LIESKE  
Senior Party<sup>2</sup>

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Patent Interference No. 103,548

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FINAL HEARING: April 28, 1999

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Before SCHAFER, GRON and LORIN, Administrative Patent Judges.

LORIN, Administrative Patent Judge.

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<sup>1</sup> Application 07/707,130, filed May 31, 1991, now U.S. Patent 5,178,637, granted 1/12/93. Accorded the benefit of France application 9006803, filed May 31, 1990, with respect to Counts 1 and 2 only, see infra. Also, application 08/676,491 for reissue of U.S. Patent 5,178,637, filed July 8, 1996. Accorded the benefit of France application 9006803, filed May 31, 1990, with respect to all counts. Assigned to L'Oreal of Paris, France.

<sup>2</sup> Application 07/949,851, filed November 19, 1992. Accorded the benefit of PCT application PCT/EP 91/00874, filed May 10, 1991, and German application P4016177.3, filed May 19, 1990, with respect to all the counts. Assigned to Henkel Kommanditgesellschaft auf Aktien of Duesseldorf, Germany.

## Patent Interference No. 103,548

This is a Final Decision in the interference proceeding involving:

- Lagrange et al. (Lagrange), U.S. Patent No. 5,178,637, filed May 31, 1991;
- Lagrange Reissue (Lagrange Reissue), Application 08/676,491, filed July 8, 1996<sup>3</sup>; and,
- Konrad et al. (Konrad), Application 07/949,851, filed November 19, 1992.

The following three counts define the interfering subject matter:

### COUNT 1

The process for oxidative dyeing of keratin fibers of claim 1 of the Konrad application,  
or,  
the method for dyeing keratinous fibers of claim 7 of the Lagrange patent.

### COUNT 2

The hair dyes of claim 4 of the Konrad application,  
or,  
the tinctorial composition of claim 1 of the Lagrange patent,  
or,  
the new compound of claim 28 of the Lagrange patent,

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<sup>3</sup> The reissue application was added to the interference in the Decision on Preliminary and Other Motions (paper no. 49).

The questions of whether reissue application 08/676,491 should be added to the interference and whether any of the Lagrange reissue claims should be designated to correspond to the counts were raised during oral arguments on preliminary motions conducted on September 30, 1996 (see paper no. 47). Lagrange had previously filed a Notice of Filing a Reissue Application (paper no. 35). The reissue application 1) amends patent claims 1-21 and 24-26 to limit them to n-(C<sub>2</sub>-C<sub>4</sub>)alkyl-5,6-dihydroxyindoline compounds; 2) cancels Lagrange patent claims 27 and 28; and 3) adds new claims 30-34 directed to tinctorial compositions and a method of using them. Patent claims 22 and 23, directed to a multicomponent dyeing agent, and 29, directed to n-(C<sub>2</sub>-C<sub>4</sub>)alkyl-5,6-dihydroxyindoline compounds, remain unchanged. In view of the fact that Lagrange patent and reissue claims 29 are identical and patent claim 29 had already been designated as corresponding to Count 2, the APJ added the Lagrange reissue to the interference pursuant to 37 CFR § 1.642 and redeclared the interference (paper no. 49, p. 42) to designate reissue claims 1-21, 24-26 and 29 as corresponding to the counts and reissue claims 22, 23 and 30-34 as not corresponding to the counts. The reissue application was also accorded the benefit, for the purpose of priority under 35 U.S.C. § 102(g), of French patent application 90/06,803, filed May 31, 1990 (see paper no. 49, p. 43).

The APJ permitted the parties to file additional preliminary motions under 37 CFR §§ 1.633(c)(3) or (4) (paper no. 49, p. 41) and oppositions and supplemental affidavits in support of the preliminary motions and oppositions, in order to address the way in which the Lagrange reissue claims were designated to correspond to the counts. Parties were not permitted to file replies (paper no. 49, p. 41). Lagrange and Konrad availed themselves of this opportunity to file Preliminary Motion 3, Preliminary Motion 7 and Contingent Preliminary Motion 8.

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or,  
the new compounds of claim 29 of the Lagrange patent.

### COUNT 3

The process for oxidative dyeing of keratin fibers of claim 13 of the Konrad application,  
or,  
the method for dyeing keratinous fibers of claim 9 of the Lagrange patent.

The parties' claims<sup>4</sup> which are designated to correspond to the counts are:

### COUNT 1:

- Lagrange '637 patent: claims 7-8
- Lagrange '491 reissue application: claims 7-8
- Konrad '851 application: claims 1-3, 8-12

### COUNT 2:

- Lagrange '637 patent: claims 1-6, 24-25, 27-29
- Lagrange '491 reissue application: claims 1-6, 24-25, 29
- Konrad '851 application: claims 4-7

### COUNT 3:

- Lagrange '637 patent: claims 9-21 and 26
- Lagrange '491 reissue application: claims 9-21 and 26
- Konrad '851 application: claims 13-14

The parties' claims which are designated as NOT corresponding to any count:

- Lagrange '637 patent: 22-23
- Lagrange '491 reissue application: 22-23 and 30-34
- Konrad '851 application: none

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<sup>4</sup> The claims are reproduced in Appendices 1-3. Note that Lagrange reissue claims 27 and 28 have been cancelled and therefore do not appear among the claims designated to correspond and not to correspond to the counts.

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Konrad has been accorded the benefit of an earlier filing date (May 19, 1990) with respect to all the counts.

### COUNTS 1 and 2:

- Konrad's '851 application is accorded the benefit of the May 19, 1990 filing date of German application P 40 16 177.3. The benefit was accorded in the Order declaring the interference (paper no. 1, 37 CFR § 1.611(c)(5)) and has not been opposed.
- Lagrange '637 patent is accorded benefit of the May 31, 1990 filing date of French application 90/06,803. Lagrange (Preliminary Motion 1, paper no. 22) moved under 37 CFR § 1.633(f) during the preliminary motion phase to have its '637 patent accorded the benefit of the May 31, 1990 filing date of French application 90/06,803. Konrad filed an opposition but since Konrad took no position on Lagrange's motion, there was, in effect, no opposition (see paper no. 49, p. 5).
- Lagrange reissue application '491 is accorded the benefit of the May 31, 1990 filing date of French application 90/06,803. "At the hearing, it was agreed that the Lagrange reissue application should be accorded a benefit date, for purposes of 35 U.S.C. § 102(g), of May 31, 1990, with respect to all the counts" (paper no. 49, p. 41).

### COUNT 3

- Konrad's '851 application is accorded the benefit of the May 19, 1990 filing date of German application P 40 16 177.3. Konrad (Konrad's Preliminary Motion 4, paper no. 29) moved under 37 CFR § 1.633(f) to have interfering '851 application accorded the same benefit as was accorded the application with respect to Counts 1 and 2 . Lagrange did oppose the motion and therefore Konrad's motion was granted (see paper no. 49, p. 28).
- Lagrange '637 patent is accorded a filing date of May 31, 1991. "[W]ith respect to Count 3, Lagrange did not move for benefit with respect to the Lagrange patent" (paper no. 49, p. 41, footnote 4). Accordingly, Lagrange's patent is not accorded the benefit of the May 31, 1990 filing date of French application 90/06,803, 37 CFR § 1.630.
- Lagrange reissue application '491 is accorded the benefit of the May 31, 1990 filing date of French application 90/06,803. "At the hearing, it was agreed that the Lagrange reissue application should be accorded a benefit date, for purposes of 35 U.S.C. § 102(g), of May 31, 1990, with respect to all the counts" (paper no. 49, p. 41).

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By virtue of being accorded the benefit of an earlier filing date (May 19, 1990) with respect to all the counts, Konrad is the senior party in this interference. 37 CFR §§ 1.657 and 1.601(m).

This is a Final Decision resolving the issues raised at final hearing<sup>5</sup>, 37 CFR § 1.658.<sup>6</sup> The parties have filed briefs, opposition briefs, and reply briefs<sup>7</sup> as well as records<sup>8</sup> consisting of evidence in the nature of affidavits, testimony, publications and exhibits.

The issues presented for our decision include the parties' outstanding motions and the issues raised by the parties in their briefs<sup>9</sup> in response to the Decision on Preliminary and Other Motions, Order Setting Testimony and Related Periods, and

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<sup>5</sup> We refer to the final hearing of April 29, 1999, not to the hearing of March 31, 1998. The three member panel which heard oral argument on March 31, 1998, consisted of Senior Administrative Patent Judge McKelvey, Administrative Patent Judges Ellis and Weimar. Judge Weimar resigned soon thereafter and was replaced by Administrative Patent Judge Schafer. In response, Lagrange requested new oral argument. The three member panel which heard oral argument on April 29, 1999, consisted of Administrative Patent Judges Schafer, Gron and Lorin.

<sup>6</sup> A party is not, without good cause, entitled to raise for consideration at final hearing a matter which could have been raised by motion or in an opposition to a motion under 37 CFR § 1.633. Grose v. Plank, 15 USPQ2d 1338, 1342 (Bd. Pat. App. & Int. 1990); Grove v. Johnson, 22 USPQ2d 1044, 1046 (Bd. Pat. App. & Int. 1991).

<sup>7</sup> Hereinafter, the briefs, opposition briefs and reply briefs will be designated by the following abbreviations followed by page number:

LB Lagrange Brief, filed February 2, 1998 (paper no. 90)  
KB Konrad Brief, filed January 30, 1998 (paper no. 94)  
LOB Lagrange Opposition Brief, filed February 27, 1998 (paper no. 99)  
KOB Konrad Opposition Brief, filed February 27, 1998 (paper no. 100)  
LRB Lagrange Reply Brief, filed March 20, 1998 (paper no. 102)  
KRB Konrad Reply Brief, filed March 20, 1998 (paper no. 107)

<sup>8</sup> References to the Lagrange Record (paper no. 103) will be designated as LR, followed by page number; references to the Konrad Record (paper no. 105) will be designated as KR, followed by page number.

<sup>9</sup> Matters not raised in a parties' brief are ordinarily regarded as abandoned. Photis v. Lukenheimer, 225 USPQ 948 (Bd. Pat. Int. 1984).

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Order Redeclaring the Interference<sup>10</sup> (paper no. 49) and as represented by their Statements of the Issues<sup>11</sup>.

The outstanding motions are:

Lagrange<sup>12</sup>

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<sup>10</sup> A combined Decision on Preliminary and Other Motions, Order Setting Testimony and Related Periods, and Order Redeclaring the Interference (paper no. 49) [Decision on Motions] was rendered on October 1, 1996. The motions that were addressed and their corresponding decisions are as follows:

- Lagrange:
  - Preliminary Motion 1 (paper no. 22) – granted
  - Preliminary Motion 2 (paper no. 24) – deferred to final hearing
- Konrad:
  - Preliminary Motion 1 (paper no. 26) – dismissed without prejudice
  - Preliminary Motion 2 (paper no. 27) – granted
  - Preliminary Motion 3 (paper no. 28) – granted
  - Preliminary Motion 4 (paper no. 29) – granted
  - Preliminary Motion 5 (paper no. 30) – deferred to final hearing
  - Preliminary Motion 6 (paper no. 31) – granted

<sup>11</sup> A verbatim copy of which is provided in Appendix 4.

<sup>12</sup> Lagrange filed LPM2 on June 4, 1996, during the preliminary motion phase. In support thereof, Lagrange submitted a first declaration of Jean Cotteret (Cotteret I, filed June 4, 1996; see paper no. 35 and LR 1-4). Subsequently, Lagrange filed a Notice of Filing a Reissue Application (paper no. 35). Konrad filed an opposition to the motion (Konrad Opposition 2, paper no. 40, filed July 12, 1996) which was supported with a first declaration of Horst Höffkes (Höffkes I, paper no. 40, see KR 7-9) as well as a prior art reference, i.e., US Patent 5,011,500 to Grollier. Lagrange filed a reply (Lagrange Reply 2, paper no. 41, filed August 2, 1996) supported by a third Cotteret declaration (Cotteret III; paper no. 41, see KR 12-16).

Oral arguments on preliminary motions were held on September 30, 1996. On October 1, 1996, a Decision on Preliminary and Other Motions (paper no. 49) was rendered. After reviewing LPM2, Konrad's opposition and Lagrange's reply, Cotteret I-III and Höffkes I, as well as the Grollier '500 reference, a final decision on LPM2 was ordered deferred to final hearing (paper no. 49, p. 23).

In deferring a final decision on LPM2, issues of anticipation (paper no. 49, pp. 18-19) and obviousness (paper no. 49, pp. 19-20) of the Lagrange Patent claim 29, as well as "loose ends" in the declarations of the parties (paper no. 49, pp. 21-23), were commented upon. The parties were authorized to submit supplemental declarations to overcome objections by opponents and the comments raised in the decision (paper no. 49, p. 23). Lagrange responded with a Supplement to LPM2 (paper no. 60, filed March 31, 1997) supported with a fourth Cotteret declaration (Cotteret IV, paper no. 61, filed March 31, 1997; see LR 17-22). Konrad responded with a third Höffkes declaration (Höffkes III, paper no. 65, filed April 21, 1997; see KR 14-21). We note that Lagrange responded to a number of points made in Höffkes III in their Opposition to KPM3 (paper no. 66, May 2, 1997; pp. 11-14), as well as in their fifth Cotteret declaration (Cotteret V, paper no. 66, filed May 2, 1997; see LR 24-25). Konrad responds in its Reply to Lagrange's Opposition to KPM3 (paper no. 74, filed August 4, 1997; p. 7) and in its fifth Höffkes declaration (Höffkes V, paper no. 75; pp. 2-4).

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- Preliminary Motion 2 - under 37 CFR § 1.633(b) [sic § 1.633(c)(4)]<sup>13</sup> to redefine the interfering subject matter by designating Lagrange patent claim 29 to not correspond to Count 2, filed June 4, 1996 (paper no. 24) [LPM2].
- Preliminary Motion 3<sup>14</sup> - under 37 CFR § 1.633(c)(4) to redefine the interfering subject matter by designating Lagrange reissue claims 1-21, 24-26 and 29 to not correspond to the counts, filed March 31, 1997. (paper no. 61) [LPM3].
- Motion to suppress evidence - under 37 CFR § 1.656(h), filed February 2, 1998 (paper no. 95) [LMS].

### Konrad<sup>15</sup>

The parties were also requested to comment, in their supplemental affidavit and/or briefs, "on the relevance of [FR 2,008,797] in view of its disclosure that R can be hydrogen or a lower alkyl group and that the benzene ring can contain hydroxyl groups" (paper no. 49, p. 24).

Finally, a rebuttal testimony period was set to permit filing of rebuttal affidavits and for cross-examination (paper no. 49, p. 24).

In response to the Order Redefining the Interference, Lagrange moved under 37 CFR § 1.633(c)(4) to redefine the interfering subject matter by designating Lagrange reissue claims 1-21, 24-26 and 29 as not corresponding to the counts (LPM3).

LPM3 was filed on March 31, 1997, after the Decision on Preliminary and Other Motions. The motion was supported with a fourth declaration of Jean Cotteret (Cotteret IV, filed March 31, 1997; see paper no. 61 and LR 17-22) and a publication by Chavdarian [i.e., Chavdarian et al, "Oxidative and Cardiovascular Studies on Natural and Synthetic Catecholamines", Journal of Medicinal Chemistry, 1978, Vol. 21, No. 6, pages 548-54]. Konrad filed an opposition (Opposition 3, paper no. 69, filed May 2, 1997) to the motion supported with a fourth Höffkes declaration (Höffkes IV; paper no. 70, filed May 2, 1997; see KR 28-35)

<sup>13</sup> Lagrange incorrectly moves under § 1.633(b) for judgment on the ground that there is no interference-in-fact. According to the Rule, "A motion under this paragraph is proper only if ... no claim of a party which corresponds to a count is identical to any claim of an opponent which corresponds to that count" [our emphasis]. Lagrange moves only with respect to Patent claim 29. However, all of Lagrange's other Patent claims still correspond to the counts. Under these circumstances, § 1.633(b) does not apply because the interference involves claims of the Lagrange Patent which correspond to a count that are identical to Konrad's claims corresponding to that count. We will presume Lagrange intended to move under § 1.633(c)(4) instead.

<sup>14</sup> Lagrange previously filed another Preliminary Motion 3 (paper no. 25). To be consistent with parties' records, Lagrange's Preliminary Motion 3 [hereinafter LPM3] will refer to this and not the previous motion.

<sup>15</sup> Konrad filed KPM5 on June 4, 1996, during the preliminary motion phase, and cited US Patent 5,011,500 (Grollier) in support thereof. After submitting a Notice of Filing a Reissue Application (Paper no. 35), Lagrange filed an opposition to KPM5 (Lagrange Opposition 1, paper no. 36, filed July 12, 1996), supported by a second declaration of Jean Cotteret (Cotteret II, paper no. 35, filed July 8, 1996). Konrad then filed a reply to the opposition (Konrad Reply 1, paper no. 42, filed August 2, 1996) relying on a second declaration of Dr. Horst Höffkes (Höffkes 2).

Oral arguments on preliminary motions were held on September 30, 1996. On October 1, 1996, a Decision on Preliminary and Other Motions (paper no. 49) was rendered. After reviewing KPM5, Lagrange's opposition and Konrad's reply, Cotteret II and Höffkes II, as well as the Grollier '500 reference, a final decision on KPM5 was ordered deferred to final hearing (paper no. 49, p. 38).

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- Preliminary Motion 5 - under 37 CFR § 1.633(c)(3) to redefine the interfering subject matter by designating claims 22 and 23 of the Lagrange patent to correspond to Count 2, filed June 4, 1996 (paper no. 30) [KPM5].
- Preliminary Motion 7 - under 37 CFR § 1.633(c)(3) to redefine the interfering subject matter by designating claims 22, 23 and 30-33 of Lagrange reissue application to correspond to Count 2, and Lagrange reissue claim 34 to correspond to Count 3, filed March 31, 1997 (paper no. 63) [KPM7].

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In deferring a final decision on LPM2, the obviousness of the Lagrange Patent claims 22-23 in light of the subject matter of Konrad claims 4-7 and Grollier '500 was raised (paper no. 49, p. 35). It was also noted that, in contrast to Lagrange Patent claims 22-23, Grollier was not directed to indolines but to the use of a mixture of dihydroxyindoles and a phenylenediamine. This raised the question of whether the "effect of Composition (B) of Grollier '500 is due to the dihydroxyindole, the phenylenediamine or the mixture of both?" (paper no. 49, pp. 35-36). To answer this question, two new references were cited: French '061 and Parent '404. It was further noted that, during the hearing, Lagrange called attention to Chavdarian for the purpose of showing how indolines oxidize to indoles (paper no. 49, p. 36). Finally, certain "loose ends" with respect to Cotteret II were commented upon. It was ordered that the parties be authorized to submit supplemental declarations to overcome objections by opponents and the comments in the decision (paper no. 49, p. 38). Lagrange responded with a Supplement to Lagrange's Opposition to KPM5 (paper no. 62, filed March 31, 1997) wherein the "loose ends" in Cotteret II were addressed.

It was also ordered that the parties comment, in their supplemental affidavit and/or briefs, "on the relevance of Parent '404 and French '061" (paper no. 49, p. 38).

Finally, it was ordered that a rebuttal testimony period be set to permit filing of rebuttal affidavits and for cross-examination (paper no. 49, p. 38).

The reissue application identified in Lagrange's aforementioned Notice of Filing a Reissue Application includes reissue claims 22 and 23 directed to a multicomponent dyeing agent. They are identical to patent claims 22 and 23 which are the subject of KPM5. Pursuant to 37 CFR § 1.642, the Lagrange reissue was added to this interference (Decision on Preliminary and Other Motions, paper no. 49). As a result of adding the reissue application to the interference, the interference was redeclared (paper no. 49, p. 42) (see discussion supra). Like Patent claims 22 and 23, reissue claims 22 and 23 were also designated as not corresponding to a count.

The parties were given an opportunity to address their agreement or disagreement with the manner in which the Lagrange reissue claims were designated and, accordingly, permitted to file additional preliminary motions under 37 CFR § 1.633(c)(3) or (4) (paper no. 49, p. 41). Parties were also permitted to file supplemental affidavits in support of the preliminary motions, oppositions and affidavits in support of the oppositions. Parties were not permitted to file replies (paper no. 49, p. 41). In response to the Order Redeclaring the Interference, Konrad moved under 37 CFR § 1.633(c)(3) to redefine the interfering subject matter by designating Lagrange reissue claims 22 and 23 as corresponding to the counts (KPM7).

KPM7 was filed on March 31, 1997 (paper no. 63), after the Decision on Preliminary and Other Motions. The motion was supported by a third declaration of Höffkes (Höffkes 3, filed April 21, 1997, see paper no. 65) and Grollier '500. Lagrange filed an opposition (Opposition to KPM7, paper no. 66, filed May 2, 1997) to the motion supported by a fifth Cotteret declaration (Cotteret V; paper no. 66, filed May 2, 1997; see LR 24-25).



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- Contingent<sup>16</sup> on granting KPM7, Contingent Preliminary Motion 8 - under 37 CFR § 1.633(a) for judgment against Lagrange reissue claim 34 designated to correspond to Count 3 that the claim is not patentable to Lagrange, filed March 31, 1997 (paper no. 64) [KPM8].
- Motion to suppress evidence<sup>17</sup> - under 37 CFR § 1.656(h), filed January 30, 1998 (paper no. 93) [KMS].

No issue of no interference-in-fact has been raised.<sup>18</sup>

### PRIORITY

Konrad has been accorded senior party status. Accordingly, as the junior party, Lagrange has the burden of proof of establishing priority by a preponderance of the evidence. 37 CFR § 1.657(b). Bosies v. Benedict, 27 F.3d 539, 542, 30 USPQ2d 1862, 1864 (Fed. Cir. 1994).

Lagrange must establish that it reduced to practice, either actual or constructive, the inventions of the counts before senior party Konrad's earliest benefit date (May 19,

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<sup>16</sup> Although Konrad does not entitle this motion as contingent on the granting of KPM7, this must be what Konrad intends. The motion is under 37 CFR § 1.633(a) and is being applied to Lagrange Reissue claim 34. 37 CFR § 1.633(a) refers to "A motion for judgment against an opponent's claim designated to correspond to a count..." [our emphasis]. Currently, Lagrange Reissue claim 34 is designated as not corresponding to a count. Lagrange claim 34 can only correspond to a count if KPM7 is granted.

<sup>17</sup> Although the paper is entitled "Party Konrad Et Al.'s Objection To Admissibility ... Under 37 CFR § 1.656(h)..." , in the body of the paper, Konrad "moves to suppress..." (p. 2).

<sup>18</sup> Although an issue of no interference-in-fact has not been explicitly raised, LPM3 infers it. Since Lagrange reissue claims 27 and 28 have been cancelled and Lagrange reissue claims 30-34 have been designated as not corresponding to a count, Lagrange reissue claims 1-21, 24-26 and 29 at issue are the only claims remaining as designated to correspond to the count. Accordingly, LPM3 seeks to have designated as not corresponding to the counts all the Lagrange reissue claims designated as corresponding to the counts. If granted, it follows that there would be no interference-in-fact. Accordingly, Lagrange could have moved under 37 CFR § 1.633(b) to reach that same result. However, Lagrange moved under 37 CFR § 1.633(c)(4), and therefore, to establish separate patentability under 37 CFR § 1.601(n), must compare Lagrange reissue claims 1-21, 24-26 and 29 to any other claim whose designation, in the order declaring interference, as corresponding to the counts is not in dispute (i.e., Konrad claims 1-14 and Lagrange patent claims 1-21, 24-28), see 37 CFR § 1.637(c)(4)(ii). Had Lagrange filed the motion under 37 CFR § 1.633(b), the approach would have been to compare Lagrange reissue claims 1-21, 24-26 and 29 to all of Konrad's claims 1-14.

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1990), or that it first conceived the inventions prior to that date and, from a time prior to the time the senior party entered the field, proceeded with reasonable diligence toward a reduction to practice, either actual or constructive. Haskell v. Colebourne, 671 F.2d 1362, 1365-366, 213 USPQ 192, 194 (CCPA 1982).

Lagrange relies only on the May 31, 1990 filing date of its prior French application 90/06,803 as proof of a constructive reduction to practice.

Lagrange does not intend to present evidence to prove conception or an actual reduction to practice and intends to rely solely on the filing date of application 90/06,803, filed May 31, 1990 in France to prove constructive reduction to practice [with respect to Counts 1 and 2 (see preliminary statement, paper no. 23, attached to paper no. 51) as well as Count 3 (see preliminary statement, paper no. 57), 37 CFR § 1.626].

Consequently, since earliest date that Lagrange states it is relying upon (i.e., May 31, 1990<sup>19</sup>) is later in time than the earliest date upon which Konrad relies (May 19, 1990), Lagrange cannot establish priority based on its proof of a constructive reduction to practice as long as Konrad is properly accorded the benefit of the May 19, 1990 filing date of German application P 40 16 177.3.

Lagrange has not moved to attack the benefit accorded Konrad's interfering '851 application of the May 19, 1990 filing date of German application P 40 16 177.3. In fact, Lagrange is prepared to concede priority as to the subject matter of Counts 1-3.

Lagrange intends to file a concession of priority with respect to the subject matter [of] Counts 1 and 2 subject to the granting of Party Lagrange et al's Preliminary Motion 2. In the event that new Count 3 is added to this interference, Lagrange intends to file a concession of priority as to the subject matter of Count 3.

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<sup>19</sup> With respect to the Lagrange patent, this benefit date applies to the subject matter of Counts 1 and 2 only; the earliest date Lagrange can rely upon with respect to its patent as to Count 3 is May 31, 1991. See supra.

See Lagrange's Notice of Filing a Reissue Application (paper no. 35, p. 3). Also,

Lagrange hereby concede priority of the subject matter of Counts 1 and 2 to the party Konrad subject to the granting of Party Lagrange et al's Preliminary Motion 2 to designate Lagrange patent claim 29 as not corresponding to the counts and subject to the denial of Konrad et al Preliminary Motion No. 5 to designate Lagrange patent claims 22 and 23 as corresponding to the counts.

See Lagrange's Concession of Priority (paper no. 38).

Accordingly, we find that Lagrange has not proved prior invention by a preponderance of the evidence, and therefore, Konrad is the presumptive first inventor of the subject matter of Counts 1-3.

As the presumptive first inventor, Konrad is entitled to priority in the interference based on its constructive reduction to practice as of the May 19, 1990 filing date of German application P 40 16 177.3 and is therefore entitled to a patent containing patentable claims designated as corresponding to a count. In that regard, Lagrange has not moved for judgment attacking the patentability of any Konrad claim designated as corresponding to a count. Accordingly, Konrad's claims designated as corresponding to the counts are presumed patentable. As a result, Konrad is entitled to a patent containing claims 1-14 of Application 07/949,851.

□————□

In light of our priority determination, Lagrange is not entitled to priority as to the subject matter of Counts 1-3. Therefore, Lagrange is not entitled to a patent containing claims designated to correspond to the counts; currently that means claims 1-21, 24-29 of Lagrange reissue application 08/676,491 and claims 1-21, 24-29 of Lagrange U.S. Patent 5,178,637 - although Lagrange challenges the designation of Lagrange patent

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claim 29 and Lagrange reissue claims 1-21, 24-26 and 29 as corresponding to the counts (see infra). Lagrange is entitled to a patent containing those claims designated as not corresponding to a count; currently that means Lagrange patent and reissue claims 22-23 and Lagrange reissue claims 30-34 - although Konrad challenges this (see infra).

Claims 1-21, 24-28 of Lagrange U.S. Patent 5,178,637

There is no challenge to the designation of Lagrange patent claims 7-8 as corresponding to Count 1, Lagrange patent claims 1-6, 24-25, 27-28 as corresponding to Count 2, and Lagrange patent claims 9-21 and 26 as corresponding to Count 3. No motion has been filed to redefine the interfering subject matter to designate Lagrange patent claims 1-21, 24-28 as not corresponding to a count. Accordingly, given that Konrad prevails on priority with respect to the counts, we hold Lagrange is not entitled to a patent containing any of Lagrange patent claims 1-21 and 24-28 corresponding to the counts.

Claim 29 of Lagrange U.S. Patent 5,178,637 and Claims 1-21, 24-26 and 29 Lagrange Reissue Application 08/676,491

Lagrange challenges the designation of Lagrange patent claim 29 and Lagrange reissue claims 1-21, 24-26 and 29 as corresponding to the counts. Lagrange moves under 37 CFR § 1.633(c)(4) to redefine the interfering subject matter by designating:

- Lagrange patent claim 29 to not correspond to Count 2;

See Lagrange Preliminary Motion 2<sup>20</sup> (paper no. 24) [LPM2] .

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<sup>20</sup> Lagrange incorrectly moves under § 1.633(b) for judgment on the ground that there is no interference-in-fact. According to the Rule, "A motion under this paragraph is proper only if ... no claim of a party which

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- Lagrange reissue claims 7-8 to not correspond to Count 1;
- Lagrange reissue claims 1-6, 24-25 and 29 to not correspond to Count 2; and,
- Lagrange reissue claims 9-21 and 26 to not correspond to Count 3.

See Lagrange Preliminary Motion 3 (paper no. 61<sup>21</sup>) [LPM3].

Lagrange has the burden of proof to show that it is entitled to the relief sought in its two motions<sup>22</sup>, 37 CFR § 1.637. Furthermore,

a preliminary motion seeking to designate an application or patent claim as not corresponding to the count shall... [s]how that the claim does not defined [sic] the same patentable invention as any other claim whose designation in the notice declaring the interference as corresponding to the count the party does not dispute. 37 CFR § 1.637(c)(4)(ii).

The standard for determining separate patentable inventions is set forth in 37 CFR § 1.601(n):

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corresponds to a count is identical to any claim of an opponent which corresponds to that count" [our emphasis]. Lagrange moves only with respect to Patent claim 29. However, all of Lagrange's other Patent claims still correspond to the counts. Under these circumstances, § 1.633(b) does not apply because the interference involves claims of the Lagrange Patent which correspond to a count that are identical to Konrad's claims corresponding to that count. We will presume Lagrange intended to move under § 1.633(c)(4) instead.

<sup>21</sup> There was a previous Preliminary Motion 3 (paper no. 25). To be consistent with parties' records, "Lagrange Preliminary Motion 3" will refer to this paper, not the previous one.

<sup>22</sup> We will treat LPM2 and LPM3 together. Although LPM2 is directed to Lagrange patent claim 29 and LPM3 is directed to Lagrange reissue claims 1-21, 24-26 and 29, the issues are the same. Lagrange patent and reissue claim 29 identically teach n-(C<sub>2</sub>-C<sub>4</sub>)alkyl-5,6-dihydroxyindolines. The rest, Lagrange reissue claims 1-21, 24-26, are limited to using the n-(C<sub>2</sub>-C<sub>4</sub>)alkyl-5,6-dihydroxyindoline compounds. In other words, all the claims to which LPM2 and LPM3 are drawn share the same limitation: the n-(C<sub>2</sub>-C<sub>4</sub>)alkyl-5,6-dihydroxyindoline compounds of Lagrange patent/reissue claim 29. It is the patentability of those compounds that is at issue in both motions. Accordingly, the motions present the same arguments:

- "Lagrange [patent] claim 29 is directed to new compounds consisting of n-(C<sub>2</sub>-C<sub>4</sub>)alkyl-5,6-dihydroxyindolines and their salts." LPM2, p. 2, paragraph 3.
- "Lagrange reissue application 29 is directed to new compounds consisting of n-(C<sub>2</sub>-C<sub>4</sub>)alkyl-5,6-dihydroxyindolines and their salts. Lagrange reissue application claims 1-6 and 24-25 are directed to compositions containing these new compounds. Lagrange reissue application claims 1-8, 9-21 and 26 are directed to a method of dyeing keratinous fibers using compositions containing these new compounds." LPM3, p. 2, paragraph 4.

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Invention "A" is the *same patentable invention* as an invention "B" when invention "A" is the same as (35 U.S.C. 102) or is obvious (35 U.S.C. 103) in view of invention "B" assuming invention "B" is prior art with respect to invention "A." Invention "A" is a *separate patentable invention* with respect to invention "B" when invention "A" is new (35 U.S.C. 102) and non-obvious (35 U.S.C. 103) in view of invention "B" assuming invention "B" is prior art with respect to invention "A."

Lagrange does not dispute that

- Lagrange patent claims 7-8 and Konrad claims 1-3, 8-12 correspond to Count 1;
- Lagrange patent claims 1-6, 24-25, 27-28 and Konrad claims 4-7 correspond to Count 2; and,
- Lagrange patent claims 9-21, 26 and Konrad claims 13-14 correspond to Count 3.

Accordingly, to meet its burden, Lagrange<sup>23</sup> must show that:

1. the invention defined by Lagrange reissue claims 7-8 is not anticipated (35 U.S.C. § 102) and not rendered obvious (35 U.S.C. § 103) with respect to any of Lagrange patent claims 7-8 and Konrad claims 1-3, 8-12;
2. the invention defined by Lagrange patent claim 29 and reissue claims 1-6, 24-25 and 29 is not anticipated (35 U.S.C. § 102) and not rendered obvious (35 U.S.C. § 103) in view of any of Lagrange patent claims 1-6, 24-25, 27-28 and Konrad claims 4-7; and,
3. the invention defined by Lagrange reissue claims 9-21 and 26 is not anticipated (35 U.S.C. § 102) and not rendered obvious (35 U.S.C. § 103) with respect to any of Lagrange patent claims 9-21, 26 and Konrad claims 13-14.

### Anticipation

The Decision on Motions<sup>24</sup> has significantly reduced the issues for our consideration. The only concern is whether Lagrange patent (or reissue) claim 29 may

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<sup>23</sup> Lagrange's brief (LB 10) states that the two inquiries are:

1. "whether Lagrange has satisfied their burden of proof in showing that the Lagrange invention is not anticipated by the Konrad invention."; and,
2. "whether Lagrange has satisfied its burden of proof in showing that the Lagrange invention is not obvious over the Konrad invention taken together with other prior art."

<sup>24</sup> An abbreviation of the aforementioned combined "Decision on Preliminary and Other Motions Order Setting Testimony and Related Periods Order Redeclaring the Interference".

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be anticipated by Konrad claim 4.<sup>25</sup>

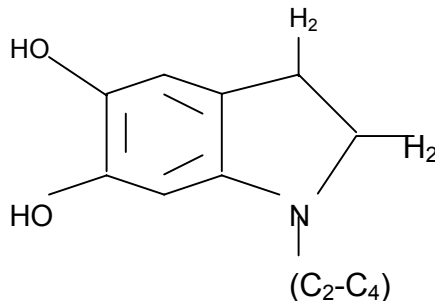
“For a prior art reference to anticipate in terms of 35 U.S.C. § 102, every element of the claimed invention must be identically shown in the single reference,” In re Bond, 910 F.2d 831, 832, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990). The test for anticipation is not an “ipsissimis verbis”-type test whereby the terms of a claim must be shown to be literally and exclusively recited in a single reference. See Akzo N.V. v. U.S. International Trade Commission, 808 F.2d 1471, 1479 n.11, 1 USPQ2d 1241, 1245 n.11 (Fed. Cir. 1986). A “reference anticipates a claim if it discloses the claimed invention ‘such that a skilled artisan could take its teachings in combination with his own knowledge of the particular art and be in possession of the invention.’” In re Graves, 69 F.3d 1147, 1152, 36 USPQ2d 1697, 1701 (Fed. Cir. 1995).

Anticipation is a question of fact. In re Paulsen, 30 F.3d 1475, 1478, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994). The facts are:

- Lagrange patent claim 29 (i.e., the invention) provides for:  
  
29. New compounds consisting of N-(C<sub>2</sub>-C<sub>4</sub>)alkyl-5,6-dihydroxyindolines and their salts.
- The chemical structure of the compounds of Lagrange claim 29 is:

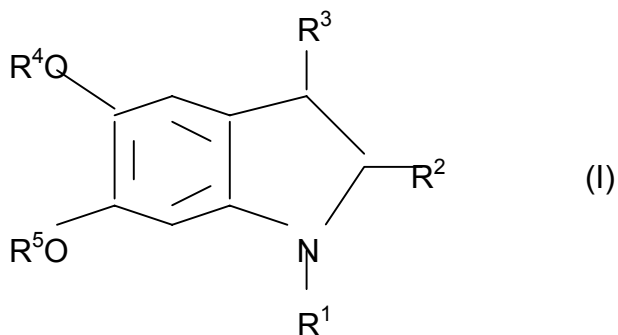
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<sup>25</sup> The APJ raised sua sponte the question of “whether the subject matter of Konrad claim 4 anticipates Lagrange claim 29” in the Decision on Motions (paper no. 49; pp. 18-19).



- Konrad claim 4 (i.e., the presumed prior art) reads:

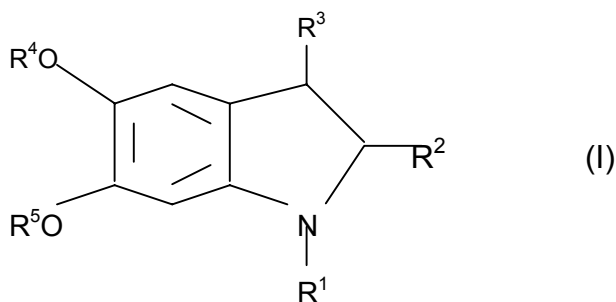
4. Hair dyes comprising oxidative dye precursors in a carrier, wherein indolines, or salts of indolines, of formula I:



in which R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, and R<sup>5</sup> independently of one another represent hydrogen or C<sub>1-4</sub> alkyl groups, or R<sup>4</sup> and R<sup>5</sup> together with the oxygen atoms to which they are attached may represent an alkylendioxy group containing 1 to 4 carbon atoms are present in a quantity of 0.1 to 20 millimoles per 100g of hair dye as oxidation dye precursors and the carrier is a gel containing 1 to 20% by weight of a soap or an oil-in-water emulsion containing 1 to 25% by weight of a fatty component and 0.5 to 30% by weight of an emulsifier from the group of anionic, nonionic, cationic, or ampholytic surfactants.

- Konrad claims
  - the use of indolines, or salts of indolines, corresponding to formula I:





where  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$  independently of one another represent hydrogen or  $C_{1-4}$  alkyl groups, or  $R^4$  and  $R^5$  together with the oxygen atoms to which they are attached may represent an alkylenedioxy group containing 1 to 4 carbon atoms, including:

- alkyl-substituted indolines corresponding to formula I where one of the groups  $R^1$ ,  $R^2$ , and  $R^3$  is a  $C_{1-4}$  alkyl group and the other groups (i.e.,  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$ ) are hydrogen (claim 6).

Accordingly:

- Lagrange claims N-( $C_2$ - $C_4$ )alkyl-5,6-dihydroxyindolines;
- Konrad claims a genus of  $C_{1-4}$  alkyl-substituted indolines that covers at least 59,049 compounds;<sup>26</sup> and,
- Konrad claims a genus of alkyl substituted indolines that includes Lagrange's claimed subgenus.

Lagrange is asserting that the indolines of Lagrange's claim 29 are not anticipated by Konrad claim 4. Consistent with its burden of proof, Lagrange must demonstrate that there is a lack of identity between the  $C_2$ - $C_4$  alkyl N-substituted indolines Lagrange claims and the inclusive invention described by Konrad claim 4 as

<sup>26</sup> Lagrange agrees that "Konrad does generically describe 5,6-dihydroxyindolines which include compounds where  $R^1$  can be  $C_{1-4}$  alkyl." (LB 16). The "59,049" number was calculated in the Decision on Motions (see p. 10; "at least 59,049") and has not been challenged (see LB 13: fact 13. "...at least about 59,000.").

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the presumed prior art. There must be no difference between them as viewed by a person of ordinary skill in the art.

Konrad claim 4 provides for a generic formula that encompasses C<sub>2</sub>-C<sub>4</sub> alkyl N-substituted indolines but also covers many other indolines. The fact that a claimed compound may be encompassed by a generic formula does not by itself render that compound anticipated. See In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Here, given the vast number of indolines encompassed by the Konrad formula, we find that Konrad does not describe Lagrange's C<sub>2</sub>-C<sub>4</sub> alkyl N-substituted indolines. Accordingly, the C<sub>2</sub>-C<sub>4</sub> alkyl N-substituted indolines are not anticipated by Konrad claim 4.

The parties were requested to brief the anticipation question in light of the cases<sup>27</sup> in the Commissioner's Notice of April 17, 1995<sup>28</sup>, 1174 OG 68 (May 9, 1995), entitled In re Baird, as well as In re Taub, 348 F.2d 556, 146 USPQ 384 (CCPA 1965).

Both parties have assessed the case law on the subject of genus/species and agree that a broad generic disclosure that encompasses a claimed invention may constitute a "description" of that claim within the meaning of 35 U.S.C. § 102(b) if there

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<sup>27</sup> The cases are: In re Baird, 16 F.3d 380, 29 USPQ2d 1550 (Fed. Cir. 1994); In re Bell, 991 F.2d 781, 26 USPQ2d 1529 (Fed. Cir. 1993); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992); Merck & Co. v. Biocraft Labs., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989); In re Susi, 440 F.2d 442, 169 USPQ 423 (CCPA 1971); In re Lemin, 332 F.2d 839, 141 USPQ 814 (CCPA 1964); In re Rosicky, 276 F.2d 656, 125 USPQ 341 (CCPA 1960).

<sup>28</sup> From this Notice derived the interim Genus-Species Guidelines to assist Office personnel in examining claims to a chemical species where a single prior art reference discloses a genus that encompasses the claimed species (see Commissioner's Notice of February 5, 1997, 1196 OG 37; also Consolidated Listing of Official Gazette Notices Re-Patent and Trademark Office Practices and Procedures, 1218 OG 110-116 and MPEP 2144.08).

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is a suggestion to narrow the broad disclosure. Petering, 301 F.2d at 681, 133 USPQ at 279. The parties disagree, however, on whether Konrad provides sufficient suggestion to narrow Konrad's class of indolines to a sufficiently small genus that anticipates Lagrange's C<sub>2</sub>-C<sub>4</sub> alkyl N-substituted indolines.

Where there is a broad generic disclosure in a reference that encompasses a claim, it may not constitute a "description" of that claim within the meaning of 35 U.S.C. § 102(b) unless there is a suggestion in the reference to narrow the broad disclosure. See In re Petering, 301 F.2d 676, 681, 133 USPQ 275, 279 (CCPA 1962). However, "it is not the mere number of compounds in this limited class which is significant here but, rather the total circumstances involved", Petering, 301 F.2d at 681-82, 133 USPQ at 280 (the court was able to narrow the prior art disclosure to "only" 20 species).

Lagrange concedes that Konrad teaches a generic chemical formula encompassing a vast number of indolines but submits that Konrad does not provide information leading to a smaller genus that would anticipate the claimed species. In that regard, Lagrange argues that "the fact that a claimed subgenus may be encompassed by a generic formula does not by itself render the subgenus or compound anticipated" (LB 26). According to Lagrange, the court in In re Petering, 301 F.2d 676, 681, 133 USPQ 275, 279-80 (CCPA 1962), found claims to a species of chemical compounds anticipated by a prior art generic chemical formula encompassing a vast number of compounds but only because information to reduce the vast number of compounds to a number that "described" the claimed compounds was also disclosed. According to Lagrange, consistent with Petering, In re Ruschig, 343 F.2d 965, 974, 145

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USPQ 274, 282 (CCPA 1965), indicates that the Petering finding "is not appropriate where the prior art does not disclose a small recognizable class of compounds with common properties" (LB 26). Lagrange also cites Merck & Co., Inc. v. Biocraft Laboratories Inc., 874 F.2d 804, 807, 10 USPQ2d 1843, 1846 (Fed. Cir. 1989), to reiterate the point that a generic formula is anticipatory of a claimed species only if the reference also discloses specific preferences leading one to a smaller genus that describes the claimed species. Lastly, Lagrange discusses In re Taub, 348 F.2d 556, 146 USPQ 384 (CCPA 1965) stating that "In re Taub is only pertinent to the present case to the extent it implies that a very small genus ... may possibly anticipate a species" (LB 27).

Konrad (KOB 19) argues that

the fact that a claimed subgenus or compound may be encompassed by a generic formula does not by itself render the subgenus or compound anticipated. On the other hand, a genus may be so small that, taken together with other facts, it describes or anticipates a claimed subgenus or compound within the genus.

Konrad argues that Taub supports the view that a genus may anticipate a species and that "[t]his is very similar to the present case. The court held that the subgenus only amounted to a difference in degree. In re Taub, 348 F.2d 556, 560, 146 USPQ 384, 387." (KOB 19). To support its argument that the compounds of Lagrange claim 29 differ from the Konrad subgenus only by degree, Konrad points out that Konrad discloses

- 1) C<sub>0</sub> as a preferred compound (KOB 5, paragraph 15); and,
- 2) the genus of C<sub>1-4</sub> alkyl-substituted indolines (KOB 1-2, paragraph 3).

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After considering the parties' divergent views on the patentability of Lagrange's patent claim 29, we remain of the opinion, in light of the facts and the law on genus/species, that Lagrange patent claim 29 is not anticipated by Konrad claim 4.

Konrad's '851 claims do "not disclose a small recognizable class of compounds with common properties" (see Petering supra) that include the compounds Lagrange claims. Konrad provides no reason or guidance that would lead one to narrow the broad compound genus to a subgenus that would include C<sub>2</sub>-C<sub>4</sub> alkyl N-substituted indolines. We cannot therefore say that the genus of Konrad claim 4 anticipates Lagrange's species based on any recognition on the part of Konrad of Lagrange's species. Konrad's alleged recognition of C<sub>0</sub> and C<sub>1</sub> alkyl substituents is insufficient to render Konrad claim 4's broad genus anticipatory of the C<sub>2</sub>-C<sub>4</sub> alkyl N-substituted indolines of Lagrange patent (and reissue) claim 4.<sup>29</sup>

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<sup>29</sup> Compare with In re Taub. Rauser was awarded priority to a count broadly covering steroids. Award of priority was based on evidence of priority with respect to a hydrogen species only. Because Taub did not meet its burden of showing they were first inventors as to the hydrogen species, Taub was not determined to be the first inventors of the subject matter of the count. Subsequently, Taub sought claims covering a fluoro species. However, the examiner rejected on anticipation grounds the claims to the fluoro species over the lost count. On appeal, the Court addressed the anticipation rejection with respect to both § 102(a) and the concept of "domination" by the count but reversed the rejection. Instead, the Court decided that it was "necessary to remand the case for a full consideration of the issue ... the determination of whether the 9 $\alpha$ - fluoro species is obvious over the 9-hydrogen species of the count..." See Taub at 389.

Obviousness

The Decision on Motions has significantly reduced the issues for our consideration.<sup>30</sup>

The issue is whether Lagrange's C<sub>2</sub>-C<sub>4</sub> alkyl N-substituted indolines, and salts thereof, would have been obvious over Konrad's claims, taking into account Konrad's claim to a subgenus encompassing a C<sub>1</sub> alkyl-substituent (see e.g., Konrad claim 7) in view of the prior art as represented by the J. Chem. Soc. 1967, Grollier '500 and FR '797 references. The burden is on Lagrange to demonstrate that the C<sub>2</sub>-C<sub>4</sub> alkyl N-substituted indolines of their claims are patentably nonobvious over the indolines of Konrad's claims in view of J. Chem. Soc. 1967, Grollier '500 and FR '797.

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<sup>30</sup> The following comments were made in the Decision on Motions (paper no. 49, pp. 19-20):

The issue of whether the combination of the subject matter of Konrad claim 4 and Grollier '500 render the subject matter of Lagrange claim 29 unpatentable under 35 U.S.C. § 103 should not be resolved on this record and, therefore, is deferred to final hearing.

Lagrange has the burden of demonstrating that the compounds of Lagrange claim 29 would have been unobvious when considered in light of the subject matter of Konrad claim 6 and other prior art. 37 CFR § 1.638(a). Nevertheless, and without regard to which party has the burden, it seems to me that the subject matter of Lagrange claim 29 would have been prima facie obvious when considered in light of Konrad claim 7 and Grollier '500.

The difference between the indolines of Konrad claim 7 and the indolines of Lagrange claim 29 is that the former have, inter alia, an N-hydrogen or N-methyl group whereas the latter claims an N-ethyl, propyl or butyl group. The utility of the Konrad indolines and the Lagrange indolines is essentially the same. Grollier '500, while dealing with indoles, and not indolines, nevertheless reveals compounds with structure similar to the Konrad/Lagrange compounds. The utility of the indoles of Grollier '500 is essentially the same as the utility of the Konrad/Lagrange compounds. Grollier '500 reveals alternative N-hydrogen and N-alkyl groups wherein the alkyl is "lower alkyl" (Konrad Exhibit 2, col. 2, line 61). "[L]ower alkyl ... preferably denote[s] C<sub>1</sub>-C<sub>5</sub> radicals" (Konrad Exhibit 2, col. 3, lines 20-21). The substitution of an N-ethyl group for an N-methyl group would appear to have been prima facie obvious in view of the teaching of the interchangeability of hydrogen and alkyls of Grollier '500. Accordingly, as a matter of law, it would appear to have been prima facie obvious to make and use an N-ethyl indoline in a dyeing process given the prior art teachings of Konrad claim 7 and Grollier '500.

Prima facie obviousness is one thing; the ultimate conclusion of obviousness is another matter. The ultimate issue on this record is whether the Lagrange claim 29 compounds would have been obvious under 35 U.S.C. § 103 when considered in light of the prior art, i.e., Konrad claim 7, Grollier '500 and the objective evidence presented by the parties. For the reasons which follow, the ultimate § 103 issue cannot be resolved at this time and, therefore, will be deferred to final hearing. An opportunity will be given for each party to supplement its declaration evidence.

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A claimed invention is invalid for obviousness if the differences between it and the prior art "are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103(a). "Invalidity based on obviousness is a question of law based on underlying facts. See Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966); Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1566-68, 1 USPQ2d 1593, 1595-97 (Fed. Cir. 1987). The relevant facts relate to (1) the scope and content of the prior art, (2) the level of ordinary skill in the field of the invention, (3) the differences between the claimed invention and the prior art, and (4) any objective evidence of nonobviousness such as long felt need, commercial success, the failure of others, or copying. Graham, 383 U.S. at 17, 148 USPQ at 467; see Continental Can Co. USA, Inc. v. Monsanto Co., 948 F.2d 1264, 1270, 20 USPQ2d 1746, 1750-51 (Fed. Cir. 1991)." C.R. Bard Inc. v. M3 Systems Inc., 157 F.3d 1340, 48 USPQ2d 1225, 1231 (Fed. Cir. 1998).

### *Scope and Content of Prior Art*

Konrad claims:

- a genus of C<sub>1-4</sub> alkyl-substituted indolines that covers a large number of compounds;
- and a subgenus of methyl substituted indolines, i.e. C<sub>1</sub> alkyl N-substituted indoline;
- an indoline structure that is the same as that of Lagrange; and,
- indolines are useful for dyeing hair.

J. Chem. Soc. 1967 (which is cited in the Konrad '851 specification, at p. 3, lines 9-10; copy attached) discloses:

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- 5,6-dihydroxyindoline.

Grollier '500 patent discloses:

- N-hydrogen and C<sub>1</sub>-C<sub>5</sub> alkyl N-substituted indoles (spec., col. 3, lines 20-21).
- indoles are useful for dyeing hair.

French '797 patent discloses:

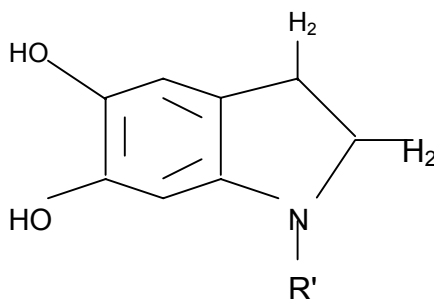
- monohydroxyindolines;
- N-ethyl-4-hydroxyindoline hydrobromide; and,
- monohydroxyindolines are useful for dyeing hair.

### *Level of Ordinary Skill in the Art*

- The parties agree that a person of ordinary skill in the art is one who formulates cosmetic products. LB 17 and KOB 6, paragraph 8. Accordingly, the level of ordinary skill is that of the ordinary chemist.

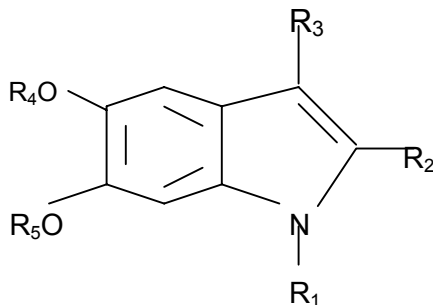
### *Differences Between Lagrange Claims and Prior Art*

- There is no difference between dihydroxyindoline oxidation dyes encompassed by Konrad's claims and those of the Lagrange patent/reissue claims when R' is defined as an alkyl substituent:



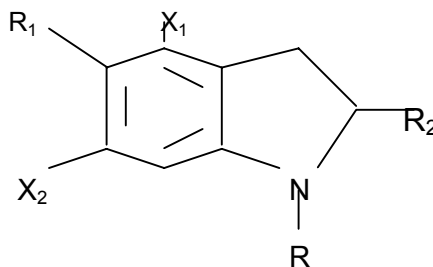
- The only difference between the compounds claimed by Lagrange and Konrad is that Lagrange's compounds are C<sub>2</sub>-C<sub>4</sub> alkyl N-substituted indolines while Konrad teaches C<sub>1</sub> alkyl N-substituted indolines.
- Grollier teaches indole direct dyes of the following structure:





where R<sub>1</sub> can be hydrogen or a lower alkyl when R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> can be hydrogen (see column 2, line 49 to column 3, line 19).

- FR '797 teaches monohydroxyindoline oxidation dye couplers of the following structure:



where R and R<sub>2</sub> can be hydrogen or lower alkyl; R<sub>1</sub> can be hydrogen, lower alkyl, or lower alkoxy; one of X<sub>1</sub> and X<sub>2</sub> is hydroxy and the other is hydrogen; and R<sub>1</sub> is hydrogen when X<sub>2</sub> is not hydrogen (see page 1, lines 21-38).

### *Discussion: The Prima Facie Case*

There is no dispute that dihydroxyindoline oxidation dyes were known.

Furthermore, while Konrad does not explicitly claim C<sub>1</sub> alkyl N-substituted indolines, Konrad claim 7, for example, does present a subgenus of indolines that covers four compounds<sup>31</sup> (LB 31). The narrowness of the scope of the claim 7 compounds would

<sup>31</sup> According to Konrad, claim 7 covers four compounds - one where R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> are all hydrogen, and three where R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> may be a methyl group (KOB 22). Claim 7 actually recites "indolines ... when the groups R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> are hydrogen, except that one of the groups R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> may be a methyl group." From our reading of this claim, R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> cannot all be

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lead us to conclude that Konrad reasonably would have suggested C<sub>1</sub> alkyl N-substituted indoline to one of ordinary skill in the art and therefore renders obvious any claim that might be directed to it<sup>32</sup>. Moreover, Lagrange admits that the C<sub>1</sub> alkyl N-substituted indoline is old in the art (LB 20, footnote 11). Accordingly, there is no issue about whether a prima facie case of obviousness would exist for claims directed to C<sub>1</sub> alkyl N-substituted indoline. The only issue is whether a prima facie case of obviousness would exist for the homologous C<sub>2</sub>-C<sub>4</sub> alkyl N-substituted compounds.

Grollier teaches N-hydrogen and C<sub>1</sub>-C<sub>5</sub> N-substituted indoles. We agree with Lagrange that "Grollier '500 does not specifically disclose an N-substituted indole" (LB 32). However, Grollier does disclose various alternative substituents attached to the N-atom on the indole structure. This suggests that the substituents are interchangeable. In view of the fact that indoles and indolines have similar, albeit different, structures, and teaches that indoles, like indolines, are useful in hair-dyeing. Grollier's teaching of C<sub>0</sub>-C<sub>5</sub> N-substituted indoles, and the concomitant suggestion of interchangeability between the substituents, would lead one of ordinary skill in the art to also view the C<sub>0</sub>-C<sub>4</sub> N-substituents on indolines as interchangeable.

We note that Lagrange (LB 32) disputes the applicability of Grollier's indoles to Lagrange's indolines, not with respect to the view, suggested by Grollier, that the C<sub>0</sub>-C<sub>4</sub> N-substituents on the indolines are interchangeable, but on the ground that Grollier's

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hydrogen. Although such a species is included in the broad genus of claim 1, claim 7 is directed only to three methyl species.

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indoles have "significantly different stability characteristics and oxidation mechanisms".

(1) With respect to stability, Lagrange directs our attention to the Konrad specification (page 1, line 6 to page 2, line 4) and the Lagrange patent (col. 1, lines 18-27). (2) With respect to oxidation, we are directed to a publication by Chavdarian (LR 14).

Regarding (1), there appears to be no dispute that indoles and indolines exhibit different stabilities (see e.g., KOB 4, paragraph 10). However, we do not see how this makes Grollier's teaching with regard to indoles irrelevant to Lagrange's indolines. The instant indolines are acknowledged to be related to their indole counterparts. For example, both parties recognized that 5,6-hydroxyindoles are relatively unstable as compared to 5,6-dihydroxyindolines and that 5,6-dihydroxyindoline hair dyes do not exhibit the stability problems associated with 5,6-hydroxyindole (Lagrange Patent '637, column 1, lines 23-30; Konrad application '851, pp. 1-2). "A reference is reasonably pertinent if ... it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." In re Clay, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992). In our view, Grollier's teachings would have commended itself to the attention of persons having ordinary skill in the art and that makes its teaching relative indoles relevant to the subject indolines.

Regarding (2), we agree with Konrad that Chavdarian is irrelevant because it shows a "theoretical, mechanistical consideration of oxidation reactions of catecholamines" (KOB 4, paragraph 11). Chavdarian is directed to catecholamines

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<sup>32</sup> Although the Lagrange patent claims both the unsubstituted and C<sub>1</sub> alkyl N-substituted indolines (e.g., claim 25), those claims are not before us. The reissue application amended the patent claims to eliminate any reference to them.

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whose relevance to indole and indoline hair dyes is unclear at best. Lagrange points to a portion of an oxidation and cyclization reaction scheme involving catecholamines and 6-hydroxydopamine (Chavdarian, p. 549; Scheme I) which Lagrange (LB 15) alleges will, after oxidation to iminoquinone and rearrangement, transform 5,6-dihydroxyindoline to the corresponding indole. However, Lagrange does not explain in what way this portion of the Chavdarian reaction scheme shows indoles and indolines to be significantly different. On the contrary, the reaction appears to show, as with the stability issue, that indoles and indolines are related to each other. Also, whether or not they may oxidize differently in a Chavdarian system is not an indication that they perform any differently in hair dyeing applications - the utility shared by both the Grollier indoles and the Konrad/Lagrange indolines.

Accordingly, Lagrange's arguments attacking the relevance of Grollier's disclosure of indoles to Lagrange's indolines are unpersuasive. Grollier is analogous prior art and, therefore, the interchangeability suggested to exist between each of Grollier's N-hydrogen and lower alkyl N-substituted indoles suggests a comparable interchangeability would exist between C<sub>0</sub>-C<sub>4</sub> alkyl N-substituted indolines.

FR '797 teaches monohydroxyindolines and exemplifies N-ethyl-4-hydroxyindoline hydrobromide (Examples 1-3; see also KOB paragraph 12.; LRB 2, paragraph 57.). FR '797 therefore teaches two alternatives at the N-position on the structure of monohydroxyindolines: a hydrogen and an ethyl group. This suggests that the hydrogen and ethyl groups are interchangeable. In view of the fact that monohydroxyindolines and dihydroxyindolines have similar, structures and

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monohydroxyindolines, like dihydroxyindolines, are useful in hair-dyeing, FR '797's teaching of C<sub>0</sub> and C<sub>2</sub> alkyl N-substituted monohydroxyindolines, and the concomitant suggestion of interchangeability between them, would have led one of ordinary skill in the art to view the C<sub>0</sub>-C<sub>4</sub> alkyl N-substituents on indolines as equally interchangeable.

We note that Lagrange (LB 114-15) disputes the relevance of FR '797's monohydroxyindolines to Lagrange's dihydroxyindolines, not with respect to the view, suggested by '797, that the C<sub>0</sub>-C<sub>4</sub> N-substituents on the indoline are interchangeable, but on the grounds that FR '797 teaches (a) monohydroxyindolines rather than Lagrange's dihydroxyindolines, and (b) monohydroxyindolines as couplers with an oxidation dye (i.e., a base such as paraphenylenediamine) .

Regarding argument (a), aside from carrying only a single hydroxyl group, the compounds of FR '797 are structurally similar to the indolines of Konrad/Lagrange as well as the indoles of Grollier '500. We are not made aware of any differences which would outweigh the similarities in structure and utility that would lead one of ordinary skill in the hair dyeing art away from correlating FR '797's suggested interchangeability of substituents on the monohydroxyindoline structure to a like interchangeability of substituents on an dihydroxyindoline structure.

Regarding argument (b), we are not persuaded that FR '797's use of monohydroxyindolines as couplers makes the FR '797 teaching irrelevant as prior art against Lagrange's dihydroxyindolines. We agree with Konrad (KOB 6, paragraph 17) that, although FR '797 does include a base, Lagrange's claims do not exclude it.

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Furthermore, FR '797's monohydroxyindolines, like Lagrange's claimed dihydroxyindolines, perform the function as hair dyes.

Accordingly, Lagrange's two arguments attacking the relevance of FR '797 to the claimed indolines are unpersuasive. FR '797 is analogous prior art and, therefore, the interchangeability suggested to exist between each of FR '797's teaching of C<sub>0</sub> and C<sub>2</sub> alkyl N-substituted monohydroxyindolines suggests a comparable interchangeability would exist between Konrad's indolines and Lagrange's indolines.

Lagrange's arguments to the contrary having been addressed, we conclude that, to one with ordinary skill in the art Lagrange's compositions and dyeing methods involving C<sub>2</sub>-C<sub>4</sub> alkyl N-substituted indolines would have been prima facie obvious over Konrad's claimed compositions and dyeing methods involving C<sub>0</sub>-C<sub>1</sub> alkyl N-substituted indolines. Accordingly, we disagree with Lagrange's position<sup>33</sup> and find instead that Lagrange has not shown that its claims would not have been prima facie obvious over Konrad's claims designated as corresponding to the counts in view of Grollier and FR '797. Therefore, absent a showing of unexpected results, Lagrange's claimed C<sub>2</sub>-C<sub>4</sub> alkyl N-substituted indolines would have been obvious over Konrad's claims designated as corresponding to the counts in view of the cited prior art to one with ordinary skill in the art.

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<sup>33</sup> Lagrange (LB 29) takes the position that:

The indolines of Konrad and French '797, and the indoles of Grollier '500, do not make the N-(C<sub>2</sub>-C<sub>4</sub>)alkyl-5,6-dihydroxyindolines of Lagrange obvious. Konrad only claims the N-methyl compound as part of a subgenus. Grollier '500 does not specifically disclose an N-substituted indole. And French '797 relates to monohydroxyindolines. Moreover, any prima facie case of obviousness has been effectively rebutted by Lagrange.

*Discussion: Objective Evidence*

"Once a prima facie case of obviousness has been established, the burden shifts to the applicant to come forward with evidence of nonobviousness to overcome the prima facie case." In re Huang, 100 F.3d 135, 139, 40 USPQ2d 1685, 1689 (Fed. Cir. 1996). Lagrange has the burden of showing that the evidence of unexpected results is sufficient to overcome the prima facie case of obviousness. In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998). Lagrange's (LB 17, paragraph 31.) evidence is in the form of declarations by Cotteret:

- Cotteret Declaration I (paper no. 35),
- Cotteret Declaration III (paper no. 41),
- Cotteret Declaration IV (paper no. 61), and,
- Cotteret Declaration V<sup>34</sup> (paper no. 66).

By these declarations, Lagrange seeks to show that its claimed indolines exhibit unexpected properties, namely unexpectedly improved uptake.

Lagrange's initial declaration evidence, Cotteret Declaration I, was addressed in the Decision on Motions (paper no. 49, pp. 14-18), where it was found, along with Konrad's rebuttal evidence of Höffkes Declaration 1, to be inconclusive on the question of nonobviousness. The parties were given an opportunity to supplement their declaration evidence, which the parties have done, including filing additional Cotteret declarations and Hoffkes rebuttal declarations. In short, the parties have responded as follows:

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<sup>34</sup> Cotteret Declaration V does not provide results as such but rather responds to question raised in the Decision on Motions.

1. Why is Cotteret's showing of  $C_2$  sufficient to carry the entire subgenus of  $C_2$ - $C_4$ ?
  - Lagrange (paper no. 60, page 2): see Cotteret Declaration IV (Lagrange's Exhibit 5; paper no.61) where tests involving  $C_2$  and  $C_4$  are now additionally provided and compared to  $C_1$ .
2. What is the experimental error inherent in the tests conducted by Cotteret and Hoffkes?
  - Lagrange (paper no. 60, page 2): see Cotteret Declaration IV (Lagrange's Exhibit 5; paper no.61, pp. 5-6): "The mean experimental error in the tests carried out was about 0.5 units for  $\Delta E$ . The limit of perception of a difference in uptake is around 1.6 units for  $\Delta E$ , a difference in  $\Delta E$  above 2 is therefore significantly different. ... Concerning dH, a difference of 0.25 units is perceptible, a difference in dH of more than 1 unit is therefore significantly different.";
  - Konrad: None – it is based on a visual test; experiments were carried out with 2 g of composition and hair strands of 1 g and exposed to the composition and atmospheric oxygen for 45', evaluation of uptake was done visually; Munsell  $\Delta E$  values would have been above 2 because 2 or less can not be seen (see Hoffkes Declaration 3, paper no.65).
  - Lagrange: Konrad's response confirms that Hoffkes' testing is subjective. Also, that  $\Delta E$  must be 2 or above is not supported by tests (paper no.66, paragraphs 37-38); also, Lagrange disagrees that there is no error in this visual test; it is known that subjective appreciation depends on light source, observer, size, background, direction; visual assessment is less precise than spectrophotometer; in these tests the error is around 0.5; the Munsell determination is no longer based on visual comparison – it is based on colorimetric measurement as with CIELAB (see Cotteret Declaration IV); Lagrange is currently using Munsell notation (see p.3-13 of attachment 5; Cotteret Declaration V, 1.).
  - Konrad: there is no experimental error in Hoffkes' visual tests since a colorimetric test would not give different results; Hoffkes has given an estimation of experimental error by saying that  $\Delta E$  of 2 or less is not visible to the naked eye; colorimetric measurements are more reliable when the difference to be evaluated is less than  $\Delta E=2$ ; the colorimetric measurements are not more reliable where the difference can be easily perceived by the naked eye; it is easy to tell from the samples that there is extensive color difference (see Hoffkes Declaration V, paper no.75, p.3]
3. Why did Cotteret and Hoffkes not submit samples of the hair (normal and permed) before and after dyeing?
  - Lagrange indicates (paper no. 60, page 2-3) that no samples are submitted because color may not be stable over time and the best comparison is made by way of a spectrophotometer.
  - Konrad: samples of dyed natural grey hair were given – not permed; they are 4 years old, so shades have faded (Hoffkes Declaration 3, paper no.65)



- Lagrange: this confirms that color of samples have faded (paper no.66, paragraph 39); also, along with the decomposition of their 1992-3 samples, this confirms that the samples are unstable and the hair samples cannot be relied on; this justifies the use of Munsell system with objective spectrophotometer; the color was determined by using a spectrophotometer in connection with all tests – this is the method used for many years and the most reliable way to objectively compare two colors (Cotteret Declaration V, 2.)
  - Konrad: instability of dyes that are old is not a reason for using spectrophotometer because faded and decomposed dyes will not give accurate readings no matter what evaluates it [paper no.75, Hoffkes Declaration 5, p.2]
4. Reproduction of Cotteret tests; i.e., what were the actual ingredients, e.g., which fatty alcohol?
- Lagrange responds (paper no. 60, page 3) by directing our attention to Cotteret Declaration IV (Lagrange's Exhibit 5; paper no.61, pp. 3-4) where the ingredients are identified.
5. How did Cotteret determine H, V, C?
- Lagrange responds (paper no. 60, page 3) by directing attention to Cotteret Declaration IV (Lagrange's Exhibit 5; paper no.61, p. 5) where the Munsell notation (HV/C) is defined.
6. Copy of Journal of Optical is requested and Cotteret may discuss H, V, C.
- Lagrange responds (paper no. 60, page 4) with Exhibits 6 and 7. Lagrange Exhibit 5 discusses H, V, and C (see supra).
7. What is the significance of  $\Delta E$ ?
- Lagrange (paper no. 60, page 4): it represents the total deviation of the color (paper no. 60, p.4).
8. Does Konrad show the relevance of the  $\Delta E$  test? Is the  $\Delta E$  test a standard test used in industry?
- Konrad: Munsell system is a visual comparison with colored paper;  $\Delta E$  is based on the Nickerson equation but based on subjective comparison of colors; differences between Cotteret I and Hoffkes I are not because of different methods of evaluation but because Cotteret used hydrogen peroxide and Hoffkes used atmospheric oxygen; Munsell  $\Delta E$  gives false impression that it is more reliable since it uses a visible comparison of hair with colored paper – and so it is less reliable than comparing two colored hair strands (Hoffkes Declaration 3, paper no. 65).
  - Lagrange: no, Lagrange no longer uses visual comparison but a spectrophotometer – see Cotteret Declaration IV (paper no. 66, paragraph

- 40); the Munsell system has been used by L (L'Oreal) for 30 years (paper no. 64, paragraph 41); Hoffkes uses CIELAB-System based on colorimetric measurement – Cotteret Declaration IV shows results in Munsell or CIELAB (paper no. 64, paragraph 42); Cotteret Declaration V, which shows improved uptake with iodide/hydrogen peroxide system, uses CIELAB (paper no. 64, paragraph 43).
9. What is the significance of a difference in  $\Delta E$  from one dyed hair to another dyed hair?
    - Lagrange (paper no. 60, page 4): the difference in  $\Delta E$  represents the difference in uptake (see Cotteret Declaration IV; L's Exhibit 5, p. 6).
  10. Where is the supposedly unexpected result said to be obtained with the  $C_2$ - $C_4$  compounds made known in Lagrange '637?
    - Lagrange:  $C_2$ - $C_4$  are not shown in Lagrange '637 but mentioned as new (col. 2, lines 30-32) and preferred (col. 1, lines 64-68);  $C_0$  is red and  $C_2/C_4$  are blue/green and so suited for blonde hair (paper no.60, p.5).
  11. What is the significance of “less selective”?
    - Lagrange: if a dye is selective hair will not be uniformly colored; less selective means more uniform color (paper no. 60, p.5).
  12. What is significance of  $\Delta H$ ?
    - Lagrange:  $\Delta H$  signifies change in color or shade (paper no. 60, p.6).
  13. Is the Munsell notation an industry standard for measuring color?
    - Lagrange: yes (paper no. 60, p.6).
    - Konrad:  $\Delta E$  is not a standard in Germany but used in textiles and then adopted for hair (Hoffkes Declaration 3, paper no. 65).
  14. Is there a publication which explains the Munsell notation and its significance?
    - Lagrange: several documents (Lagrange's Exh. 6-12) are provided.
    - Konrad: see Hoffkes Declaration 3, paper no. 65.
  15. Why was a composition different from the composition used by Cotteret used to test the Hoffkes' dihydroxyindolines?
    - Konrad: Because it was done in 1993 before the work conducted by Cotteret; the experiments in Hoffkes Declaration 1 were not motivated by Cotteret's work (Hoffkes Declaration 3, paper no. 65).
  16. Why are the Hoffkes results not reported in terms of in  $\Delta E$  and  $\Delta H$  in the same manner that Cotteret reported his results?

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- Konrad: Because the dyes used in 1992 and 1993 have now decomposed; Konrad preferred comparing colored strands and considers it more reliable than comparing with colored paper (Hoffkes Declaration 3, paper no. 65).
- Lagrange: Hoffkes Declaration 3 says they no longer have the indolines, however they have requested synthesis department to prepare them again (Cotteret Declaration V, 1.).

17. What process parameters were used in the Hoffkes experiments?

- Konrad: 1g hair strand; 2g composition; 45 minutes in atmospheric oxygen (Hoffkes Declaration 3, #65).

The parties agree that the Munsell system and Nickerson equation are a scientifically correct and reasonably objective means of determining uptake, selectivity, and hue for a dyed hair sample. Lagrange's results are made more objective as a result of the use of a spectrophotometer, although the spectrophotometer settings that were used in the comparative testing are not specified. The experimental error in using such a technique appears to be low. Accordingly, Lagrange's data deriving from the Munsell system and Nickerson equation can be relied upon to establish unexpected improvements in uptake, selectivity and hue.

While hair samples could have assisted the panel in comparing the effect of different indolines, both parties appear to agree that, due to the instability of the dye's coloring effect over time, this would have been of limited value. Konrad has provided hair samples but they are based on dye formulations made many years ago. Although Konrad had the opportunity to provide hair samples with freshly prepared dyes (Hoffkes Deposition, paper no. 105, p. 62), they were not submitted. Lagrange has provided no hair samples at all. Accordingly, our analysis of Lagrange's objective evidence of nonobviousness is limited to the recorded values for  $\Delta E$  and  $\Delta H$  set forth in the Cotteret declarations.

The  $\Delta E$  and  $\Delta H$  data that Lagrange relies upon to establish unexpectedly improved properties for the claimed C<sub>2</sub>-C<sub>4</sub> alkyl N-substituted indolines, in contrast to the prior art C<sub>0</sub>-C<sub>1</sub> alkyl N-substituted indolines, are summarized in the following Tables. The data are grouped by Uptake (Tables 1A for natural grey hair and 1B for permed grey hair), Selectivity (Table 2) and Color (Tables 3A for natural grey hair and 3B for permed grey hair).

**TABLE 1A: Uptake<sup>35</sup> For Natural Grey (90% White) Hair**

Cotteret Declaration		I	III	III	IV
Oxidizing System		Peroxide	Peroxide	Oxygen	Peroxide
Indoline					
C <sub>0</sub>	$\Delta E$		18.96		
C <sub>1</sub>	$\Delta E$	15.5		11.76	10.63
C <sub>2</sub>	$\Delta E$	17.9 (15.5% increase)		13.62 (15.8% increase)	13.13 (23.6% increase)
C <sub>3</sub>	$\Delta E$				
C <sub>4</sub>	$\Delta E$				17.04 (60% increase)

**TABLE 1B: Uptake For Permed Grey (90% White) Hair**

Cotteret Declaration		I	III	III	IV
Oxidizing System		Peroxide	Peroxide	Oxygen	Peroxide
Indoline					
C <sub>0</sub>	$\Delta E$		21.93		
C <sub>1</sub>	$\Delta E$	11.9			12.67
C <sub>2</sub>	$\Delta E$	16.8 (41% increase)			16.78 (32.3% increase)
C <sub>3</sub>	$\Delta E$				
C <sub>4</sub>	$\Delta E$				21.4 (69% increase)

<sup>35</sup>  $\Delta E = 0.4(Co)(dH) + 6(dV) + 3(dC)$  [i.e., Nickerson equation]; where Co=saturation of initial color, dH=variation in absolute value of shade (H), dV=variation in absolute value of intensity (V), dC=variation in absolute value of saturation (C). Cotteret Declaration I.

**TABLE 2: Selectivity<sup>36</sup>**

Cotteret Declaration		I	III	III	IV
<i>Oxidizing System</i>		<i>Peroxide</i>	<i>Peroxide</i>	<i>Oxygen</i>	<i>Peroxide</i>
<b>Indoline</b>	<b>Hair type</b>				
<b>C<sub>0</sub></b>	natural ( $\Delta E$ )		18.96		
<b>C<sub>0</sub></b>	permed ( $\Delta E$ )		21.93		
	selectivity		+15.7%		
<b>C<sub>1</sub></b>	natural ( $\Delta E$ )	15.5		11.76	10.63
<b>C<sub>1</sub></b>	permed ( $\Delta E$ )	11.9			12.67
	selectivity	-23.2%			+19.2%
<b>C<sub>2</sub></b>	natural ( $\Delta E$ )	17.9		13.62	13.13
<b>C<sub>2</sub></b>	permed ( $\Delta E$ )	16.8			16.78
	selectivity	-6.1%			+27.8%
<b>C<sub>3</sub></b>	natural ( $\Delta E$ )				
<b>C<sub>3</sub></b>	permed ( $\Delta E$ )				
	selectivity				
<b>C<sub>4</sub></b>	natural ( $\Delta E$ )				17.04
<b>C<sub>4</sub></b>	permed ( $\Delta E$ )				21.4
	selectivity				+25.6%

**TABLE 3A: Color<sup>37</sup> For Natural Grey (90% White) Hair:**

Cotteret Declaration		I	III	III	IV
<b>Indoline</b>	<b>Initial:</b>	3.2Y5.7/1.5			3.2Y5.1/1.8
	<b>Oxidize</b>	<b>Peroxide</b>	<b>Peroxide</b>	<b>Oxygen</b>	<b>Peroxide</b>
<b>C<sub>0</sub></b>	<b>After:</b>		9.9YR3.2/1.3		
<b>C<sub>1</sub></b>	<b>After:</b>	8.6Y4.0/0.8		2.9Y4.4/0.7	3.8Y3.7/1.2
<b>C<sub>2</sub></b>	<b>After:</b>	5.6GY4.1/1.2		1.8Y4.2/0.7	0.6GY4/1.4
	$\Delta H(C2-C0)$		15.7		
	$\Delta H(C2-C1)$		7		
<b>C<sub>4</sub></b>	<b>After:</b>				5.2GY4.1/1
	$\Delta H(C4-C2)$				4.6

<sup>36</sup> "If dye is selective, the hair will not be uniformly colored and the tips will be darker than the nonsensitized part of the hair." Lagrange Reply 2, paper no. 41, p. 5

<sup>37</sup> Color is defined by Munsell notation HV/C. Cotteret Declaration I.

**TABLE 3B: Color For Permed Grey (90% White) Hair**

Cotteret Declaration		I	III	III	IV
<b>Indoline</b>	<b>Initial:</b>	4.0Y5.7/1.7			3.5Y5.3/1.7
	<b>Oxidize</b>	<b>Peroxide</b>	<b>Peroxide</b>	<b>Oxygen</b>	<b>Peroxide</b>
<b>C<sub>0</sub></b>	<b>After:</b>		8.3YR2.8/1.5		
<b>C<sub>1</sub></b>	<b>After:</b>	4.7Y3.8/1.7			3.6Y3.3/1.9
<b>C<sub>2</sub></b>	<b>After:</b>	8.9Y3.5/1.6			7.0Y3/1.5
	$\Delta H(C_2-C_0)$		10.6		
	$\Delta H(C_2-C_1)$		4.2		
<b>C<sub>4</sub></b>	<b>After:</b>				6.0GY3.4/1.2
	$\Delta H(C_4-C_2)$				9

We still find the evidence as a whole inconclusive on the question of whether Lagrange's C<sub>2</sub>-C<sub>4</sub> alkyl N-substituted indolines exhibit unexpectedly improved properties with respect to the C<sub>0</sub>-C<sub>1</sub> alkyl N-substituted indolines.

Before we get to the "uptake" and "color" results, we make the following comments about the "selectivity" data (see data in Table 2 supra). Unexpected improvements in "selectivity" was one of the initial arguments Lagrange made (see LPM2 and Cotteret declarations I and III) to establish the nonobviousness of its C<sub>2</sub>-C<sub>4</sub> indolines. But that is no longer the case. "Selectivity", based on a comparison of  $\Delta E$  (i.e., indoline uptake) results for permed and natural grey (90% white) hair, is a measure of the uniformity of the hair coloring (Lagrange Reply 2, paper no. 41, p. 5). Initially, the results appeared to show that C<sub>2</sub> provided a more uniform coloring than C<sub>1</sub> (i.e., Cotteret Declaration I: the C<sub>2</sub> uptake for permed hair was only 6.1% less than for natural hair, compared with C<sub>1</sub> uptake for permed hair which was 23.2% less than for natural hair). But more recent results contradict that conclusion (Cotteret IV: C<sub>2</sub> uptake for permed hair is 27.8% greater than for natural hair, compared with C<sub>1</sub> uptake for permed hair which was only 19.2% more than for natural hair). While initial results showed C<sub>2</sub>

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provided more uniform hair coloring, more recent results are comparable.

Consequently, the "selectivity" data is, at best, inconclusive on the issue of nonobviousness of the Lagrange's C<sub>2-4</sub> indolines.

Turning now to the "uptake" results (see data in Tables 1A and 1B supra), we observe that Lagrange has only conducted one or two dyeings (LR 38, lines 18-19). This is insufficient. Cotteret admits (LR 64) that uptake results differ depending on the batch of hair being dyed. Moreover, porosity of the hair (i.e., hair type) is a relevant and critical variable in determining uptake. Lagrange (LRB 25) admits this is the case:

The second inconsistency alleged by Konrad relates to the difference in uptake on permed hair of the N-methyl and N-ethyl compounds in Declaration I versus Declaration IV. ... However, as implicitly acknowledged by Konrad, the porosity (as opposed to color) of the hair samples may have been different with respect to the hair samples used in connection with these two declarations.

(LRB 25). In other words, the uptake results which are submitted as evidence of unexpected results for the claimed indolines may in fact have been peculiar to the porosity of the samples of dyed hair. Since only one or two tests have been conducted, there is no way of knowing whether or how extensive an influence hair porosity had on the final uptake values. Because of differences in batches and porosity and the real possibility of inconsistent results, the uptake results are inconclusive.

We also observe that the uptake results for C<sub>1</sub> and C<sub>2</sub> shown in Cotteret IV are not the same as those shown in Cotteret I. This raises questions about the reproducibility of the results. For example, for natural hair, the uptake results in Declaration IV are significantly lower than those provided in Declaration I, and yet for the permed hair, the results are similar. This begs for more comparative testing.

The testing is not only inadequate, the strict parameters of the tests limits the scope of any conclusion that may be drawn from the data. Only two formulations and oxidizing systems have been compared: composition A/B (Cotteret I, pp. 2-3; "peroxide") and composition E (Cotteret III, p. 4, per Hoffkes Declaration 1; "oxygen"). Only 4 indolines have been tested: C<sub>0</sub>, C<sub>1</sub>, C<sub>2</sub>, and C<sub>4</sub>, and only in the hydrobromide salt form. Also, the tests are limited to grey hair. Only certain solvents are used. The narrowness of the testing parameters makes it difficult to tell whether any unexpected improvement in uptake is actually due to differences in indoline chemical structure or from the particular testing conditions employed. In addition, given the limited focus of the experiments and considering the breadth of Lagrange's claims, which cover a broad range of indolines and innumerable dyeing and formulation systems, any conclusions that could be drawn from Lagrange's comparative testing data would not be considered commensurate in scope with what is claimed. In re Tiffin, 448 F.2d 791, 171 USPQ 294 (CCPA 1971).

Setting aside the matter of inadequate and narrow testing, there is the more significant question of whether C<sub>2</sub> and C<sub>4</sub> even have comparatively better uptake at all. To reach the conclusion that C<sub>2</sub>-C<sub>4</sub> have unexpectedly improved uptake as compared to both C<sub>0</sub> and C<sub>1</sub>, Lagrange has had to address a significant problem with the data; that is, relative to C<sub>0</sub> uptake, C<sub>2</sub> and C<sub>4</sub> do not have better uptakes (see Tables 1A and 1B which show C<sub>0</sub> has the highest uptake of any indoline tested).

Lagrange argues that the uptakes of C<sub>2</sub> and C<sub>4</sub> cannot be fairly compared to that of C<sub>0</sub> because of differences in color and hue. According to Lagrange, C<sub>0</sub>'s higher  $\Delta E$



"cannot be attributed to the better uptake but essentially to the different color (i.e. darker as it contains a red component)" (Cotteret III, p. 3). Furthermore, it is argued, their hues are substantially different<sup>38</sup>; "since the difference in hue for the unsubstituted and ethyl compounds is above 10, the  $\Delta E$  values cannot properly be compared to establish a difference in uptake" (LRB 22). Cotteret Declaration III (see Tables 3A and 3B) shows that hair dyed with C<sub>0</sub> has a different color (e.g., 9.9YR3.2/1.3) than hair dyed with C<sub>2</sub> (e.g., 5.6GY4.1/1.2). C<sub>0</sub> has a red hue (i.e., "YR"); C<sub>1</sub>, like C<sub>2</sub> and C<sub>4</sub>, are in the yellow or green-yellow range (i.e. "Y" or "GY"). This color difference is also shown through differences in hue (see  $\Delta H$  results in Tables 3A and 3B). As indicated in Tables 3A and 3B, the  $\Delta H$  difference between C<sub>2</sub> and C<sub>0</sub>, for natural grey hair, is 15.7; for permed grey hair, it is 10.6. Lagrange insists that one should not compare the uptakes of C<sub>2</sub> and C<sub>4</sub> with C<sub>0</sub>. In effect, Lagrange is arguing that, because of differences in color and hue, C<sub>0</sub> is nonanalogous. Instead, we are asked to compare the uptake of C<sub>2</sub> and C<sub>4</sub> with C<sub>1</sub>. Lagrange's C<sub>2</sub> and C<sub>4</sub> indolines and the C<sub>1</sub> indoline have similar color<sup>39</sup> and hue<sup>40</sup>. According to the data (see Table 1A and 1B), the C<sub>2</sub> and C<sub>4</sub> indolines have better uptake than C<sub>1</sub>.

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<sup>38</sup> "As discussed above, the variations of H, V, C are taken into consideration in the Nickerson equation. However, the variations are the absolute values of the changes of H, V, C by comparing a non-dyed strand of hair to a dyed strand. If the colors of two different dyed strands are such that the hues are similar, i.e., the difference in H is less than 10, it is possible to compare the two  $\Delta E$ 's and conclude from this comparison a difference in uptake since it will not be substantially influenced by the color. On the contrary, if the colors or hues of the two dyed samples are significantly different, i.e.,  $\Delta H$  greater than 10, then the comparison of  $\Delta E$ 's will not be usable to determine a different uptake, the only conclusion which can be drawn will be that the colors are different..." LRB 21-22.

<sup>39</sup> As shown in Tables 3A and 3B, C<sub>1</sub> (e.g., 8.6Y4.0/0.8) and C<sub>2</sub> (e.g., 5.6GY4.1/1.2) appear to have similar color.

<sup>40</sup> As shown in Tables 3A and 3B, the differences in hue are below 10.

For two reasons, we are not persuaded to ignore the uptake results for  $C_0$  and look only to those for  $C_1$ .

First, Lagrange is arguing that  $C_0$ 's higher  $\Delta E$  value may be due as much to its uptake as to its color<sup>41</sup>. However, this argument is based on speculation. It is not supported by any objective evidence. Objective evidence could have been provided. It would appear to have been an easy matter for Lagrange to determine the degree to which the uptake value was affected by color. It is quite possible that, after compensating for the effects of color,  $C_0$  would show an uptake that falls below the value recorded in Cotteret Declaration III, and thus nevertheless support Lagrange's position that  $C_2$  and  $C_4$  exhibit an unexpectedly better uptake. On the other hand, color may have no effect at all. We have no way of knowing. According to Lagrange,  $\Delta E$  is influenced by a sample's hue but Lagrange provides no objective means or an explanation how to adjust the uptake data that has been supplied to compensate for differences in color and hue. We are provided no information to determine the degree to which the  $\Delta E$  result is attributable to color and to then determine the final uptake.<sup>42</sup> We are simply not provided enough information to determine whether the high  $\Delta E$  value for  $C_0$  actually describes the uptake, the color, or both.

Second, Lagrange does not explain why a difference in hue of 10 represents a bright line for comparing uptakes of indolines. Why a difference in hue of, say, 9 permits

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<sup>41</sup> "The higher  $\Delta E$  value for the unsubstitute compound is essentially due to the different color of the compound and not necessarily due to a better uptake..." (LRB 23).

<sup>42</sup> It is unclear to what degree the  $\Delta E$  is affected by hue. Is the  $\Delta E$  result increased or lowered by hue? And by how much? Which hues affect  $\Delta E$  the most, the least? How can we be sure that any  $\Delta E$  value defines uptake and is not merely a more precise description of a sample's hue?

one to compare uptakes and yet a comparison cannot be made when the difference reaches 10, is not fully explained. This is especially important since the  $\Delta H$  difference between the inventive  $C_2$  and  $C_0$ , for permed grey hair, is 10.6 and the  $\Delta H$  difference between the two inventive  $C_2$  and  $C_4$  indolines, for permed grey hair, is 9 (LRB 23). It is not understood why a  $\Delta H$  of 9 would permit one to compare the  $C_2$  uptake to that of  $C_4$  but a  $\Delta H$  of 10.4 would suddenly preclude one from comparing  $C_2$  to  $C_0$ . Here the data suffers from inadequate explanation and testing. Considering how close the  $\Delta H$  results for  $C_4$  and  $C_2$  are to Lagrange's bright line, it would have been informative to have had  $\Delta H$  results for  $C_4$  and  $C_0$ , and/or for  $C_4$  and  $C_1$ . Needless to say, there is no data at all with respect to  $C_3$ . This additional data could have revealed Lagrange's logic to be the rule instead of, as now seems the case, a matter of conjecture.

In totality, we do not find that Lagrange has supported its argument for ignoring the uptake results for  $C_0$  in assessing whether Lagrange's  $C_2$  and  $C_4$  indolines have unexpectedly better uptake. Accordingly, taking into account the superior uptake exhibited by the  $C_0$  indoline, notwithstanding that the uptakes for  $C_2$  and  $C_4$  appear to be somewhat better than for  $C_1$ , the uptake data, on which Lagrange (LB 34) has placed the greatest reliance for demonstrating "surprising and unexpected" differences between the claimed indolines and that of the prior art, is, at best, inconclusive.

Turning to the "hue" and "color" results (see Tables 3A and 3B), it is not entirely clear in what way this data helps establish unexpected results for Lagrange's  $C_{2-4}$  alkyl N-substituted indolines. Suffice it to say that, for the same reasons that we have given

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with respect to the uptake data and the adequacy of the comparative testing, the hue and color data are just as inconclusive.

Lastly, we observe that, although Lagrange argues that the claimed C<sub>2</sub>-C<sub>4</sub> indolines are novel and unobvious, Lagrange's own specification makes no distinction between them and other preferred indolines (i.e., C<sub>0</sub>, C<sub>1</sub>, C<sub>2</sub>, and C<sub>4</sub>). The Lagrange Patent (col. 2, lines 1-2) discloses that C<sub>0</sub> is "particularly preferred", although it is now precluded from the claims. Moreover, other than a description of the resulting hair colors associated with the use of each of the preferred indolines, Lagrange Patent '637 does not provide any of the comparative uptake test data on which Lagrange has relied upon to establish the nonobviousness of the C<sub>2</sub>-C<sub>4</sub> indolines. None of the asserted benefits from using C<sub>2</sub>-C<sub>4</sub> indolines are disclosed. According to Lagrange (paper no. 66, paragraph 44), the selection of C<sub>2</sub>-C<sub>4</sub> solves several problems in an unobvious way:

- "they allow the production of blue-green shades instead of reddish shades";
- "they provide an improved uptake over the structurally closest 5,6-dihydroxyindoline"; and,
- "a person skilled in the art faced with the problem of providing blue-green tone dyestuffs would certainly not have been directed to use a 5,6-dihydroxyindoline and substitute it on the nitrogen atom".

However, we can find none of these asserted benefits in the specification of Lagrange's patent. It would appear therefore that, as Konrad has argued (KOB 6, paragraph 19), Lagrange may not be in a position to now attach, for example, an unexpected uptake property to the claimed C<sub>2</sub>-C<sub>4</sub> indolines. In re Lundberg, 253 F.2d 244, 247, 117 USPQ

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190, 192 (CCPA 1958). We note that Lagrange does argue that the alleged unexpected uptake results "inherently flow from what is disclosed in Lagrange '637" and therefore should not be disregarded, citing In re Slocombe, 510 F.2d 1398, 1402; 184 USPQ 740, 743 (CCPA 1975) and In re Davies, 475 F.2d 667, 177 USPQ 381 (CCPA 1973). LRB 16-17. But the lack of disclosure raises significant questions as to whether Lagrange can now rely on the uptake results set forth in the Cotteret Declarations. Nevertheless, this is not a matter we need to resolve. As we have already discussed, based on our evaluation, the declaration evidence does not establish an unexpectedly improved uptake for the claimed C<sub>2</sub>-C<sub>4</sub> indolines. The question of whether Lagrange can even rely on such data, in view of the lack of disclosure of that property, only adds to the weaknesses in the declaration evidence.

For the foregoing reasons, Lagrange has not met its burden of overcoming the prima facie case of obviousness.

Accordingly, Lagrange Preliminary Motions 2 and 3 are DENIED.

Lagrange has failed to meet its burden of establishing that the invention of Lagrange patent claim 29 and Lagrange reissue claims 1-21, 24-26 and 29 define a separate patentable invention with respect to any of Lagrange patent claims 1-21, 24-28 and Konrad claims 1-14. Accordingly, the designation of Lagrange patent claim 29 and Lagrange reissue claims 1-21, 24-26 and 29 as corresponding to the counts is maintained. Consequently, given our determination that Konrad is entitled to priority of the subject matter of Counts 1-3, Lagrange is not entitled to a patent containing claim

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29 of Lagrange U.S. Patent 5,178,637 or reissue claims 1-21, 24-26 and 29 of Lagrange Reissue Application 08/676,491 designated to correspond to those counts.

Claims 22-23 of Lagrange U.S. Patent 5,178,637 and Claims 22-23 of Lagrange Reissue Application 08/676,491

Konrad challenges the designation of Lagrange patent and reissue claims 22-23 as not corresponding to the counts. Konrad moves under 37 CFR § 1.633(c)(3) to redefine the interfering subject matter by designating:

- Lagrange patent claims 22 and 23 to correspond to Count 2.

See Konrad Preliminary Motion 5 (paper no. 30) [KPM5].

- Lagrange reissue claims 22 and 23 to correspond to Count 2.

See Konrad Preliminary Motion 7 (paper no. 63) [KPM7].

Konrad has the burden of proof to show that it is entitled to the relief sought in its motions<sup>43</sup>, 37 CFR § 1.637. Furthermore,

a preliminary motion seeking to designate an application or patent claim to correspond to a count shall... [s]how the claim defines the same patentable invention as another claim whose designation as corresponding to the count the moving party does not dispute. 37 CFR § 1.637(c)(3)(ii).

The standard for determining same patentable inventions is set forth in 37 CFR § 1.601(n):

Invention "A" is the *same patentable invention* as an invention "B" when invention "A" is the same as (35 U.S.C. 102) or is obvious (35 U.S.C. 103) in view of invention "B" assuming invention "B" is prior art with respect to invention "A." Invention "A" is a *separate patentable invention* with respect to invention "B" when

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<sup>43</sup> Because the same subject matter is involved in Lagrange patent claims 22-23 and reissue claims 22-23 (see KB 4-5, paragraphs 4 and 13), KPM7 presents the same arguments as KPM5. For this reason, we will treat KPM5 and KPM7 together.

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invention "A" is new (35 U.S.C. 102) and non-obvious (35 U.S.C. 103) in view of invention "B" assuming invention "B" is prior art with respect to invention "A."

Konrad does not dispute that Lagrange patent claims 1-6, 24-25, 27-29, Lagrange reissue claims 1-6, 24-25, 29, and Konrad claims 4-7 correspond to Count 2. Accordingly, to meet its burden, Konrad must show that Lagrange patent and reissue claims 22-23 are directed to the same patentable invention with respect to any of Lagrange patent claims 1-6, 24-25, 27-29, Lagrange reissue claims 1-6, 24-25, 29, and Konrad claims 4-7. Konrad must show that the invention of Lagrange patent and reissue claims 22-23 is anticipated by (35 U.S.C. § 102) or rendered obvious over (35 U.S.C. § 103) the invention of any of Lagrange patent claims 1-6, 24-25, 27-29, Lagrange reissue claims 1-6, 24-25, 29, and Konrad claims 4-7.

### Anticipation

Konrad does not assert that Lagrange's claims are anticipated by any of the undisputed claims.

### Obviousness

The Decision on Motions<sup>44</sup> has significantly reduced the issues for our consideration.

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<sup>44</sup> The following comments were made in the Decision on Motions (paper no. 49, pp. 37):

The parties should discuss whether the subject matter of Konrad claims 4-7 in view of both Parent '404 and French '061 provides a basis for finding Lagrange claims 22 and 23 unpatentable under 35 U.S.C. § 103. French '061 would appear to show that Lagrange Composition (B) can be used with indoles. Parent '404 shows that indoles and indolines can be expected to function as dyes. Accordingly, would it have been obvious to use the Composition (B) of French '061 or Grollier '500 with the indolines of Konrad claims 4-7 given that indoles and indolines appear to be "equivalents" when used as dyes?

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Accordingly, the issue is whether the dyeing agents of Lagrange patent and reissue claims 22-23 would have been obvious over Konrad claims 4-7 in view of the prior art as represented by Grollier ' 500, French '061 and Parent '404. The burden is on Konrad to demonstrate that the dyeing agents of Lagrange claims 22-23 would have been obvious in view of the compositions of Konrad's claims designated to correspond to the counts, Grollier ' 500, French '061 and Parent '404.

### *Scope and Content of Prior Art*

- Konrad claims 4-7 are directed to oxidative dye precursors comprising an indoline and a gel-type carrier.

### *Level of Ordinary Skill in the Art*

- There is no dispute regarding the level of ordinary skill in the art. A person of ordinary skill in the art is one who formulates cosmetic products.

### *Differences Between Lagrange Claims and Prior Art*

- Konrad claims 4-7 distinguish from Lagrange claims 22-23 only in not teaching the iodide/peroxide oxidizing system.

### *Discussion: The Prima Facie Case*

There is no dispute that Konrad claims 1-4 teach the indolines and Grollier '500 teaches the oxidation system set forth in Lagrange claims 22-23. The issue is whether one having ordinary skill in the art would have applied Grollier's teaching of using the oxidation system, albeit with phenylenediamine, with respect to indoles to Konrad's indolines thus rendering the subject matter of Lagrange's claims obvious. In that regard, FR '061 (see Examples, pp. 8-19, and claim 1) applies the Grollier oxidation system to an indole without phenylenediamine and Parent '404 (see Example 2 which describes oxidation hair dyeing with an indoline and Example 3 which describes oxidation dyeing



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with an indole; columns 4-5) suggests that equivalent oxidation mechanisms are operating when either indoles or indolines are used during oxidative hair dyeing. FR '061 and Parent '404 would have led one having ordinary skill in the art to conclude that Grollier's oxidation system is equally applicable to indolines. Accordingly, it would have been prima facie obvious to use the Grollier '500 oxidation system with the indolines of Konrad claims 1-4 in view of the teachings of FR '061 and Parent '404 to obtain the composition of Lagrange claims 22-23.

Lagrange's principal argument<sup>45</sup> (LOB, paragraphs 11-17) is that indoles and indolines are not equivalent because, in contrast to indolines, (1) indoles are unstable (LOB, paragraphs 11-17), and (2) indoles follow a different oxidation mechanism, citing the Chavdarian publication (exh. 18) (LOB, paragraph 12). This argument is unpersuasive for the same reasons discussed earlier. We add that instability is not synonymous with a difference in chemical properties. While instability may reduce the probability of success, once achieved, indoles appear to perform identically as indolines. Regarding oxidation mechanisms, Chavdarian is directed to oxidative studies on catecholamines in the context of biological systems. This may be irrelevant to the subject of oxidation mechanisms of indoles and indolines in the context of oxidative hair dyeing.

Lagrange also argues (LOB, paragraphs 13-17) that Grollier's use of phenylenediamine in conjunction with indole produces a different dyestuff; i.e., they

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<sup>45</sup> Lagrange also argues that Grollier does not specifically disclose N-substituted indoles (Opposition Brief, paper no. 99, paragraph 10). However, as Konrad has pointed out (Reply Brief, paper no. 107, paragraph 4), the claims are not so limited.

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react and produce different colors. However, there is no objective evidence in support of Lagrange's argument. We agree with Konrad (KRB, paragraph 9) that the effect of the presence of phenylenediamine on the oxidation mechanism is unclear, especially since Grollier uses different amounts and pHs. Moreover, in view of FR '061 (see infra), which teaches the use of a hydrogen peroxide oxidizing system in the context of an indole without phenylenediamine (see Examples on pp. 8-19), it would appear that phenylenediamine is not a major factor in the oxidation mechanism.

Lagrange repeats the same arguments that were made against Grollier '500, that there are stability and oxidation mechanism differences between indoles and indolines, in arguing against FR '061. For the same reasons, we are not persuaded. As we have already indicated, FR '061 describes oxidative dyeing with indoles and hydrogen peroxide but, importantly, FR '061 teaches oxidative dyeing in the absence of phenylenediamine which, in view of the fact that FR '061 and Grollier '500 are both directed to indoles, strongly suggests that phenylenediamine is not critical to Grollier's peroxide/iodide system.

As to Parent '404, Lagrange argues that Parent 404's coloring is accomplished by an indole with a coupler and not by the indole alone (LOB, paragraph 21). However, we have not been directed to any evidence of this. Lagrange also argues that Parent does not disclose combining iodide and hydrogen peroxide as an oxidizing system. While that may be the case, Parent 404's relevance in suggesting that indolines can be used where such an oxidizing system is applied is not defeated by not teaching the exact oxidizing system already known in the prior art (see Grollier '500). Parent

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suggests very similar oxidation mechanisms for indoles and indolines in the context of oxidative hair dyeing and that suggestion buttresses the conclusion of obviousness with respect to using the Grollier '500 oxidation system with the indolines of Konrad claims 1-4.

Lagrange's arguments to the contrary having been addressed, we conclude that, to one with ordinary skill in the art Lagrange's claims 22-23 would have been prima facie obvious to one with ordinary skill in this art over Konrad claims 1-4 in view of the facts that:

- Grollier 500 teaches using the oxidation system, albeit with phenylenediamine, with indoles;
- FR '061, like Grollier '500, teaches using an iodide/peroxide oxidizing system with indoles but without phenylenediamine; and,
- Parent suggests equivalent oxidation mechanisms for indoles and indolines in the context of oxidative hair dyeing.

*Discussion: Objective Evidence*

Lagrange's initial declaration evidence as to this issue, Cotteret Declaration II, was addressed in the Decision on Motions (paper no. 49, pp. 14-18), where it was found to have problems. Notwithstanding the parties' responses to the problems, we find the evidence unpersuasive as to the nonobviousness of the Lagrange claims.

Lagrange (LOB 32-35) seeks to overcome the prima facie case by providing objective evidence showing unexpected results using the claimed oxidizing system when dyeing with indolines. In support thereof, Lagrange has submitted Cotteret Declaration II (see Part II of Cotteret Declaration II, paper no. 35).

Uptake results for C<sub>0</sub> with an oxidizing system of iodide/peroxide, metal salt or parabenzoquinone have been compared to results obtained using a system consisting

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of peroxide alone. The system consisting of peroxide alone is representative of Konrad's disclosed system. According to the Declaration the permed results are "surprisingly improved"<sup>46</sup>. The uptake results are:

• iodide/peroxide (expt. G)	=	21.2 (natural);	33.9 (permed)
• metal salt (expt. H)	=	40.9 (natural);	44.9 (permed)
• parabenzoquinone (expt. I)	=	50.8 (natural);	49 (permed)
• hydrogen peroxide alone	=	24.4 (natural);	24.7 (permed)

These results are inconclusive on the subject of nonobviousness for Lagrange claims 22-23. Some of the deficiencies are

- For permed hair, uptake is better with hydrogen peroxide alone (per Konrad) than with a iodide/peroxide system. Accordingly this contradicts the very position Lagrange is taking.
- The experiments that were conducted employ different dyeing mediums; for example, the comparative experiment uses fatty alcohol emulsion (in accordance with Konrad's disclosure) while the other experiments used aqueous ethanol formulation. Accordingly, the difference in uptake may be due to the oxidizing system or changes in dyeing medium.
- In comparing Konrad's peroxide treatment, Cotteret used a premix in one experiment while in the other experiment (process B) the hydrogen peroxide was

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<sup>46</sup> "That it results from those tests:...

1. ...

3. that by using as an oxidizing agent either iodide/hydrogen peroxide system, or  $\text{CUSO}_4$ , or paraquinone, the uptake more particularly on sensitized hair such as permed hair is surprisingly improved." (Cotteret Declaration II, Part II, p. 7).

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applied after dyeing. The manner in which the experiments were conducted appear to be different and may have influenced the results.

Thus, the experimental evidence is unpersuasive. Too many variables were changed to attribute differences in uptake, with respect to indolines, to the use of the claimed iodide/peroxide system.

We take note of Konrad's argument (KB, paragraph top of p. 12) that the prior art supports the view that indoles and indolines behave similarly and, in support thereof, directs us to statements made by Dr. Hoffkes; see Hoffkes' third Declaration and Dr. Hoffkes' Deposition (KR 75-77), wherein Hoffkes criticizes the Cotteret declaration evidence for 1) not providing side-by-side comparisons where only the oxidizing system is different, 2) applying different times when comparing with Konrad's process, and 3) using a premix and comparing that with a post-peroxide treatment. In rebuttal, Lagrange (LOB, paragraph 39) has submitted Cotteret Declaration V. Therein, in response to the criticism, Lagrange presents the former uptake results in terms of the CIELAB system of colorimetry. As a result, the uptake now appears to be 25% better when dyed per Lagrange's iodide/peroxide system than with Konrad's peroxide-only system. However, notwithstanding this improvement, we are not persuaded that this last declaration helps to overcome the problems with the earlier objective evidence of nonobviousness (i.e., Cotteret Declaration II). In fact, as a result of the CIELAB results, we are now confused about what Lagrange considers to be unexpected. Whereas the previous results demonstrated "surprising" improvement for the uptake on permed hair only, the CIELAB results now show improvement for both natural and permed hair. There is an

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inconsistency in Lagrange's position which renders the evidence inconclusive on the issue of nonobviousness as to Lagrange claims 22-23

After careful review of the evidence and arguments of both parties, we conclude that a prima facie case of obviousness has been made out and not overcome by objective evidence of nonobviousness. Konrad has met its burden of proof with respect to its motions and, accordingly, we GRANT Konrad Preliminary Motions 5 and 7 with respect to Lagrange's patent and reissue claims 22-23 and designate them as corresponding to Count 2.

Lagrange patent and reissue claims 22 and 23 are designated as corresponding to Count 2. Consequently, given our determination that Konrad is entitled to priority for the subject matter of Count 2, Lagrange is not entitled to a patent containing claims 22 and 23 of Lagrange U.S. Patent 5,178,637 or claims 22 and 23 of Lagrange Reissue Application 08/676,491.

Claims 30-34 of Lagrange Reissue Application 08/676,491

Konrad challenges the designation of Lagrange reissue claims 30-34 as not corresponding to the counts. Konrad moves under 37 CFR § 1.633(c)(3) to redefine the interfering subject matter by designating:

- Lagrange reissue claims 30-33 to correspond to Count 2; and,
- Lagrange reissue claim 34 to correspond to Count 3.

See Konrad Preliminary Motion 7 (paper no. 63) [KPM7].

Konrad does not dispute that Lagrange patent claims 1-6, 24-25, 27-29, Lagrange reissue claims 1-6, 24-25, 29, and Konrad claims 4-7 correspond to Count 2.

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Accordingly, to meet its burden, Konrad must show that the Lagrange reissue claims 30-33 define the same patentable invention with respect to any of Lagrange patent claims 1-6, 24-25, 27-29, Lagrange reissue claims 1-6, 24-25, 29, and Konrad claims 4-7. Konrad must show that the invention of Lagrange reissue claims 30-33 is anticipated by (35 U.S.C. § 102) or rendered obvious over (35 U.S.C. § 103) the invention of any of Lagrange patent claims 1-6, 24-25, 27-29, Lagrange reissue claims 1-6, 24-25, 29, and/or Konrad claims 4-7.

Konrad does not dispute that Lagrange patent and reissue claims 9-21 and 26 and Konrad claims 13-14 correspond to Count 3. Accordingly, to meet its burden, Konrad must show that the Lagrange reissue claim 34 defines the same patentable invention with respect to any of Lagrange patent and reissue claims 9-21 and 26 and Konrad claims 13-14. Konrad must show that the invention of Lagrange reissue claim 34 is anticipated by (35 U.S.C. § 102) or rendered obvious (35 U.S.C. § 103) in view of the invention of any of Lagrange patent and reissue claims 9-21 and 26 and/or Konrad claims 13-14 designated as corresponding to the count.

Lagrange Reissue Claim 30

To prevail on its motion to designate Lagrange reissue claim 30 as corresponding to Count 2, Konrad must establish that Lagrange reissue claim 30 is the same patentable invention as any other claim whose designation as corresponding to the count it does not dispute. In that regard, Konrad is seeking to establish that Lagrange reissue claim 30 is the same patentable invention as Lagrange patent/reissue claim 4 and/or Konrad claims 4-7 whose designation as corresponding to the count it

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does not dispute. Konrad argues that "Lagrange's reissue claim 30 defines the same patentable invention as Lagrange's original and reissue claim 4, which are designated as corresponding to Count 2 and/or Konrad's claims 4-7 in view of Goldemberg [Robert Goldemberg, J. Soc. Cosmet. Chem 10, 1959, pp. 291-306] or Goldemberg et al. [Robert Goldemberg et al, J. Soc. Cosmet. Chem 19, 1968, pp. 423-445]. Again, the solvents are disclosed in Parent '404, Grollier '500, French '061, GB 2,207,443 and U.S. Patent 4,885,006." KB 25.

The facts (see table infra) show that Lagrange reissue claim 30 and Lagrange patent claim 4 are identically worded except:

- Lagrange reissue claim 30 is directed to a tinctorial composition in a medium suitable for dyeing wherein the medium suitable for dyeing is a water/solvent mixture and wherein the solvent of the water/solvent mixture ...
- Lagrange patent claim 4 is directed to a tinctorial composition in a medium suitable for dyeing ... [per claim 3: wherein the medium suitable for dyeing is an aqueous medium of water or a water/solvent mixture...].

Lagrange reissue claim 30 provides for a composition comprising a medium of a water/solvent mixture and Lagrange patent claim 4, whose designation as corresponding to the count Konrad does not dispute, provides for a composition comprising either of (1) an aqueous medium of water or (2) an aqueous medium of a water/solvent mixture. Lagrange patent claim 4's second alternative medium (i.e., an aqueous medium of a water/solvent mixture, which, for all intents and purposes, is a water/solvent mixture) is the same as the medium provided for by Lagrange reissue claim 30. There is no difference between the two. They both describe a water/solvent mixture. Given that the compositions of these two claims are otherwise the same, we



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conclude that the requisite identity exists between the composition of Lagrange reissue claim 30 and the composition of Lagrange patent claim 4 and, accordingly, hold that Lagrange patent claim 4 anticipates Lagrange reissue claim 30.

For the foregoing reasons, we find that Lagrange reissue claim 30 is the same patentable invention as Lagrange patent claim 4, whose designation as corresponding to Count 2 is not in dispute. Accordingly, we GRANT Konrad Preliminary Motion 7 and designate reissue claim 30 as corresponding to Count 2.

Because we hold that Lagrange patent claim 4 anticipates Lagrange reissue claim 30, we do not reach the issue of whether Lagrange reissue claim 30 would have been obvious over Konrad claims 4-7 in view of other prior art.

#### *Lagrange Reissue Claim 31*

Lagrange reissue claim 31 is directed to a tinctorial composition comprising an indoline and medium, as set forth in Lagrange reissue claim 30, and further containing an additive. Lagrange reissue claim 31 provides a list of 11 possible types of additives.

To prevail on its motion to designate Lagrange reissue claim 31 as corresponding to Count 2, Konrad must establish that Lagrange reissue claim 31 is the same patentable invention as any other claim whose designation as corresponding to the count it does not dispute. In that regard, Konrad seeks to establish that Lagrange reissue claim 31 is the same patentable invention as Lagrange patent claim 5 or Konrad claim 4, whose designation as corresponding to the count it does not dispute.

*Anticipation*

Looking at Lagrange patent claim 5 as the presumed prior art, Lagrange patent claim 5, is like Lagrange reissue claim 31, also directed to a tinctorial composition comprising an indoline and, like Lagrange reissue claim 31, it also further contains an additive. Lagrange patent claim 5 provides a list of 12 possible additives which identically includes all eleven of the possible additives set forth in Lagrange reissue claim 31. Consistent therewith, Konrad argues (KB 25), presumably for the purpose of establishing anticipation, that claim 31 distinguishes from patent claim 5 only in that “fatty amide” is absent from the list of additives

However, Lagrange reissue claim 31 is not otherwise identical to Lagrange patent claim 5. Lagrange reissue claim 31 differs from Lagrange patent claim 5 in describing a particular medium. Lagrange reissue claim 31 describes a tinctorial composition, including the indoline and an additive, comprising a medium containing a water/solvent mixture where the solvent is selected from a group of thirteen possible compounds, whereas Lagrange patent claim 5 is directed broadly to employing any medium. Given the infinite number of possible medium materials encompassed by Lagrange patent claim 5, one of ordinary skill cannot conclude that it teaches selecting any one of the thirteen possible mediums described by Lagrange reissue claim 31. The requisite identity does not exist and, accordingly, the Lagrange reissue claim 31 composition is not anticipated by Lagrange patent claim 5.

Looking at Konrad claim 4 as the presumed prior art, Konrad claim 4 is, like Lagrange reissue claim 31, also directed to a tinctorial composition comprising an

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indoline and, like Lagrange reissue claim 31, it also further contains an additive. Konrad claim 4 provides for cationic or non-ionic surfactants as the additive and these are identically included among the list of eleven different possible types of additives set forth in Lagrange reissue claim 31. Consistent therewith, Konrad argues, presumably for the purpose of establishing anticipation, that "Konrad's claim 4 also claims the use of anionic, cationic, non-ionic or ampholytic as a surfactant" (KB 25).

However, Lagrange reissue claim 31 is not otherwise identical to Konrad claim 4. Lagrange reissue claim 31 describes a tinctorial composition, including the indoline and an additive, comprising a medium containing a water/solvent mixture, where the solvent is selected from a group of thirteen possible compounds, whereas Konrad claim 4 describes a tinctorial composition, including the indoline and an additive, comprising a gel carrier. While the composition of Lagrange reissue claim 31 does not preclude a gel carrier, it does require a particular water/solvent medium that Konrad claim 4 does not teach. Given the infinite number of possible medium materials encompassed by Konrad claim 4, one of ordinary skill cannot conclude that it teaches selecting any one of the thirteen possible mediums described by Lagrange reissue claim 31. The requisite identity does not exist and, accordingly, the Lagrange reissue claim 31 composition is not anticipated by Konrad claim 4.

Konrad has not met its burden of showing that Lagrange reissue claim 31 is the same patentable invention as Lagrange patent claim 5 or Konrad claim 4 based on anticipation grounds.

*Obviousness*

Lagrange reissue claim 31 differs from Lagrange patent claim 5 or Konrad claim 4 in particularly providing a water/solvent medium where the solvent is selected from a group of thirteen possible compounds, including ethanol.

Konrad also seeks to meet its burden of establishing that Lagrange reissue claim 31 is the same patentable invention as Lagrange patent claim 5 or Konrad claim 4 on obviousness grounds. According to Konrad, it would have been obvious to one of ordinary skill in the art to provide a water/solvent medium where the solvent is for example ethanol in view of two Goldemberg publications. Konrad relies on

- Robert Goldemberg; J. Soc. Cosmet. Chem 10, 1959, pp. 291-306; and,
  - Robert Goldemberg et al; J. Soc. Cosmet. Chem 19, 1968, pp. 423-445;
- to argue (see KB 23) that "the solvents are well known excipients for supporting solubility or solubilization" in hair dye formulations (KB 23).

Goldemberg provides an overview of the factors a hair dye formulator should consider in making hair dye formulations. Various dyes are discussed, including oxidation dyes. There is also a section (see pages 300-301) discussing solvents, including for example water mixtures and ethanol, the selection of which, it states (p. 300), may provide greater dye concentration for increasing hair color depth (i.e., increasing dye uptake). Goldemberger et al is a study of the effect of additives on pH and other properties of oxidation hair dyes. For comparison purposes, the study uses commercial oxidation hair dyes with "Base Solutions" (page 429) comprising solvent/water mixtures that include for example propylene glycol. Both ethanol (i.e.,

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Goldemberg) and propylene glycol (i.e., Goldemberg et al.) are on the list of possible solvents provided for by Lagrange's reissue claim 31.

The Goldemberg disclosures suggest that a hair dye formulator would have considered employing a water/solvent medium containing for example ethanol or propylene glycol, among other solvents, for the purpose of increasing dye uptake or as a standard medium for studying the effect of additives on dyes. The disclosures encompass oxidation dyes, which would appear to include the indolines that are set forth in either of Lagrange patent claim 5 or Konrad claim 4. There is a reasonable expectation that when such an indoline is in a water/solvent medium containing ethanol or propylene glycol, it would, like other dyes, show for example an increase in dye uptake. For this reason, it would have been obvious to one of ordinary skill in the art to select the particular water/solvent mixtures set forth in Lagrange reissue claim 31 from the broad genus of mediums encompassed by the presumed prior art, i.e., Lagrange patent claim 5 and Konrad claim 4, in view of the Goldemberg disclosures.

Lagrange (LOB 35-37) disputes the relevance of the Goldemberg disclosures on the grounds that it is directed to any dye; that is, it does not specifically disclose indoles or indolines, and does not provide the necessary incentive to substitute Konrad's carrier with a solvent.

The first argument is unpersuasive. The Goldemberg and Goldemberg et al disclosures are very clear in stating that they are describing the effect of formulation factors/conditions and additives as they relate to any dye or any oxidation dye, respectively. To one of ordinary skill reading these references, the indication is that the

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discussion therein applies to any dye/oxidation dye as part of an effort to improve their coloring capabilities. The second argument is also unpersuasive. As already discussed, Lagrange reissue claim 31 does not preclude a gel carrier. Accordingly, the issue is not whether Lagrange reissue claim 31 would have been obvious over Konrad claim 4 for having substituted the Konrad carrier with Lagrange's medium. The issue is whether it would have been obvious to provide the Konrad claim 4 composition with a medium that is a water/solvent mixture of the kind described by Lagrange reissue claim 31.

*Objective Evidence*

Konrad has established a prima facie case of obviousness. Accordingly, the burden shifts to Lagrange to come forward with evidence of nonobviousness to overcome the prima facie case. In that regard, Lagrange (LOB 37-45) directs our attention to Cotteret II which discloses the following uptake results:

- Stearyl alcohol/coconut oil (Composition C – Konrad's medium) = 20.2 (natural) and 29.9 (permed)
- Ethanol (Composition D) = 24.8/32.8
- Propylene glycol (D) = 24.2/33.2
- Prp glcl monomethylether (D) = 22.1/32.2
- Ethylene glcl monobutyl ether (D) = 22.6/31.7
- Methyl lactate (D) = 25.4/34.9

Cotteret II allegedly demonstrates that, compared to the medium used in Konrad claim 4's formulation (Composition C), the other listed solvents provide better uptake, whether on natural or permed hair.

We have carefully reviewed the objective evidence but find that it suffers from some of the same deficiencies discussed earlier; namely, that the results are not commensurate in scope with what is claimed. For example, Lagrange's reissue claim 31

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require 0.01%-8% by weight of the indoline. However, only the 1% level has been tested. Also, only the hydrobromide salt of C<sub>0</sub> with only five of the 13 claimed solvents were tested: ethanol, propylene glycol, propylene glycol monoethyl ether, ethylene glycol monobutyl ether and methyl lactate. According to Cotteret (LR 48, lines 17-20), the other indolines were tested only with ethanol. The evidence is insufficient to support a finding of unexpected results that would overcome the prima facie case of obviousness.

After careful review of the evidence and arguments of both parties, we conclude that a prima facie case of obviousness has been made out and not overcome by the objective evidence of nonobviousness. Konrad has met its burden of proof with respect to its motion and, accordingly, we GRANT Konrad Preliminary Motion 7 with respect to designating reissue claim 31 as corresponding to Count 2.

#### Lagrange Reissue Claim 32

Lagrange reissue claim 32 is directed to a tinctorial composition comprising an indoline and medium, as set forth in Lagrange reissue claim 30, and further limits the indoline to the hydrochloride or hydrobromide salt.

To prevail on its motion to designate Lagrange reissue claim 32 as corresponding to Count 2, Konrad must establish that Lagrange reissue claim 32 is the same patentable invention as any other claim whose designation as corresponding to the count it does not dispute. In that regard, Konrad seeks to establish that Lagrange reissue claim 32 is the same patentable invention as Lagrange patent claim 24 or

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Konrad claim 4, whose designation as corresponding to the count it does not dispute.

We will focus on Lagrange patent claim 24 since it is the closest presumed prior art.

Looking at Lagrange patent claim 24 as the presumed prior art, Lagrange patent claim 24, is, like Lagrange reissue claim 32, also directed to a tinctorial composition comprising an indoline and, like Lagrange reissue claim 32, it also further limits the indoline to the hydrochloride or hydrobromide salt. Consistent therewith, Konrad argues (KB 26), presumably for the purpose of establishing anticipation, that reissue claim 32 "is essentially the same as Lagrange's original claim 24."

However, Lagrange reissue claim 32 is not otherwise identical to Lagrange patent claim 24. Lagrange reissue claim 32 differs from Lagrange patent claim 24 in describing a particular medium. Lagrange reissue claim 32 describes a tinctorial composition, including the indoline, comprising a medium containing a water/solvent mixture where the solvent is selected from a group of thirteen possible compounds, whereas Lagrange patent claim 24 is directed broadly to employing any medium. Given the infinite number of possible medium materials encompassed by Lagrange patent claim 24 the requisite identity does not exist and, accordingly, the Lagrange reissue claim 32 composition is not anticipated by Lagrange patent claim 24.

Konrad has not met its burden of showing that Lagrange reissue claim 32 is the same patentable invention as Lagrange patent claim 24 based on anticipation grounds.

However, with respect to the question of obviousness, the question is exactly the same as the obviousness question that was raised relative Lagrange reissue claim 31: whether it would have been obvious to one of ordinary skill in the art to particularly



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select a water/solvent medium where the solvent is selected from a group of thirteen possible compounds, including ethanol, from the vast number of mediums encompassed by Lagrange patent claim 24. That specific question, and the parties respective positions with respect to it, were addressed supra. We reach the same conclusion for the reasons discussed supra; after careful review of the evidence and arguments of both parties, we conclude that a prima facie case of obviousness has been made out and not overcome by objective evidence of nonobviousness. Konrad has met its burden of proof with respect to its motion and, accordingly, we GRANT Konrad Preliminary Motion 7 with respect to designating reissue claim 32 as corresponding to Count 2.

*Lagrange Reissue Claim 33*

Lagrange reissue claim 33 is directed to a tinctorial composition comprising an indoline and medium, as set forth in Lagrange reissue claim 30, and further limits the indoline to one of six specific compounds.

To prevail on its motion to designate Lagrange reissue claim 33 as corresponding to Count 2, Konrad must establish that Lagrange reissue claim 33 is the same patentable invention as any other claim whose designation as corresponding to the count it does not dispute. In that regard, Konrad seeks to establish that Lagrange reissue claim 33 is the same patentable invention as Lagrange patent claim 25 or Konrad claim 4, whose designation as corresponding to the count it does not dispute. We will focus on Lagrange patent claim 25 since it is the closest presumed prior art.

Looking at Lagrange patent claim 25 as the presumed prior art, Lagrange patent claim 25, is, like Lagrange reissue claim 33, also directed to a tinctorial composition comprising an indoline and, like Lagrange reissue claim 33, it also further limits the indoline to one of six specific compounds. Consistent therewith, Konrad argues (KB 26), presumably for the purpose of establishing anticipation, that reissue claim 33 "is essentially the same as Lagrange's original claim 25."

However, Lagrange reissue claim 33 is not otherwise identical to Lagrange patent claim 25. Lagrange reissue claim 33 differs from Lagrange patent claim 25 in describing a particular medium. Lagrange reissue claim 33 describes a tinctorial composition, including the indoline, comprising a medium containing a water/solvent mixture where the solvent is selected from a group of thirteen possible compounds, whereas Lagrange patent claim 25 is directed broadly to employing any medium. Given the infinite number of possible medium materials encompassed by Lagrange patent claim 25 the requisite identity does not exist and, accordingly, the Lagrange reissue claim 33 composition is not anticipated by Lagrange patent claim 25.

Konrad has not met its burden of showing that Lagrange reissue claim 33 is the same patentable invention as Lagrange patent claim 25 based on anticipation grounds.

However, with respect to the question of obviousness, the question is exactly the same as the obviousness question that was raised relative Lagrange reissue claim 31: whether it would have been obvious to one of ordinary skill in the art to particularly select a water/solvent medium where the solvent is selected from a group of thirteen possible compounds, including ethanol, from the vast number of mediums

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encompassed by Lagrange patent claim 25. That specific question, and the parties respective positions with respect to it, were addressed supra. We reach the same conclusion for the reasons discussed supra; after careful review of the evidence and arguments of both parties, we conclude that a prima facie case of obviousness has been made out and not overcome by objective evidence of nonobviousness. Konrad has met its burden of proof with respect to its motion and, accordingly, we GRANT Konrad Preliminary Motion 7 with respect to designating reissue claim 33 as corresponding to Count 2.

Lagrange Reissue Claim 34

Lagrange reissue claim 34 is directed to a method for dyeing keratinous fibers with a tinctorial composition comprising an indoline, a suitable medium and a chemical oxidizing system.

Reissue claim 34 provides for a "chemical oxidizing system consisting of: [ingredients] (i) ...; (ii) ...; (iii) ... ." Lagrange (LOB 27) points out that a "proposed Preliminary Amendment to Lagrange reissue claim 34 and a Supplemental Reissue Declaration were filed during the interference." The Preliminary Amendment (paper no. 6, filed May 5, 1997 in USSN 08/676,491) changes the aforementioned phrase to "chemical oxidizing system selected from the group consisting of: [ingredients] (i) ...; (ii) ...; and (iii) ... ." The effect of the amendment is to direct the claimed subject matter to using a chemical oxidizing system consisting of only one of the three recited ingredients instead of a combination of all three ingredients together. Even if we assume the

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amendment is proper,<sup>47</sup> for the reasons to follow, Konrad meets its burden of showing that Lagrange reissue claim 34 is the same patentable invention as Konrad claims 13 and 14.

To prevail on its motion to designate Lagrange reissue claim 34 as corresponding to Count 3, Konrad must establish that Lagrange reissue claim 34 is the same patentable invention as any other claim whose designation as corresponding to the count it does not dispute. In that regard, Konrad seeks to establish that Lagrange reissue claim 34 is the same patentable invention as Lagrange patent claim 9 or Konrad claims 13 and 14, whose designation as corresponding to the count it does not dispute (see KB 30).

Konrad does not appear to assert that Lagrange reissue claim 34 is anticipated by Lagrange patent claim 9 or Konrad claims 13 and 14.

Focusing on Konrad claims 13 and 14 as the presumed prior art, they are, like Lagrange reissue claim 34, directed to a method for dyeing keratinous fibers with a tinctorial composition comprising an indoline and a chemical oxidizing system. Lagrange reissue claim 34 differs from Konrad claims 13 and 14 in describing a chemical oxidizing system consisting of, for example, the combination of hydrogen peroxide and iodide ions. Konrad claims 13 and 14 describe a chemical oxidizing system consisting of, for example, hydrogen peroxide only. There is also the matter of Konrad claims 13 and 14

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<sup>47</sup> The Preliminary Amendment has been entered into the reissue application but the amended claim has not been examined by the Primary Examiner. We note that, in making its case, Konrad addresses Lagrange reissue claim 34 in its amended form: "Lagrange reissue claim 34 excludes some of these groups and only requires that one of the groups must be present." (KRB 36).

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providing for a specific gel carrier but Lagrange reissue claim 34 is broad enough to include a gel carrier and therefore that difference is not patentably consequential.

Accordingly, the issue is whether it would have been obvious to one of ordinary skill in the art to include iodide as part of the peroxide oxidizing system used in the method of Konrad claims 13 and 14.

Konrad directs our attention to the earlier discussion addressing Lagrange patent and reissue claims 22 and 23. The parties will recall that the only difference between the indoline/oxidizing component-comprising compositions of Lagrange patent and reissue claims 22 and 23 and, for example, the indoline/gel carrier-comprising composition of Konrad claim 4 is that Lagrange patent and reissue claims 22 and 23 provides for an iodide/peroxide oxidizing system and Konrad claim 4 does not. It was determined that the addition of such an oxidizing system to the Konrad composition would have been obvious to one of ordinary skill in the art in view of the known use of that system for indoles, as shown by Grollier '500 and FR '061 (with or without phenylenediamine, respectively), and the suggestion by Parent that the oxidation mechanisms for indoles and indolines are equivalent. The same obviousness analysis applies here.

In view of the fact that:

- Grollier 500 teaches using the oxidation system, albeit with phenylenediamine, with indoles in the oxidative dyeing of keratinous fibers;
- FR '061, like Grollier '500, teaches using an iodide/peroxide oxidizing system with indoles but without phenylenediamine; and,
- Parent suggests equivalent oxidation mechanisms for indoles and indolines in the context of oxidative hair dyeing,

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there would have been a reasonable expectation that an iodide/peroxide oxidizing system would be equally applicable and effective with indolines in the oxidative dyeing of keratinous fibers. Accordingly, for the same reasons we discussed earlier, we hold that Lagrange reissue claim 34 would have been prima facie obvious to one with ordinary skill in this art over Konrad claims 13 and 14.

Lagrange relies on the same arguments (LOB 45<sup>48</sup>) and objective evidence of nonobviousness (i.e., Part II of Cotteret Declaration II, paper no. 35; see LOB 47) to rebut this prima facie case of obviousness for Lagrange reissue claim 34 as were made against the prima facie case of obviousness of Lagrange patent and reissue claims 22-23. For the same reasons we found them unpersuasive as to claim 22-23, we find them similarly unpersuasive in overcoming the prima facie case of obviousness for Lagrange reissue claim 34.

We hold that a prima facie case of obviousness has been made out and not overcome by objective evidence of nonobviousness. Konrad has met its burden of proof and, accordingly, we GRANT Konrad Preliminary Motion 7 with respect to designating claim 34 as corresponding to Count 3.

Accordingly, Lagrange reissue claims 30-33 and Lagrange reissue claim 34 are designated to correspond to Counts 2 and 3, respectively. Consequently, given our

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<sup>48</sup> "The oxidative dyeing of hair using hydrogen peroxide with indolines of Konrad, and the oxidizing agents disclosed in the prior art, do not make the oxidizing agents of Lagrange obvious. Konrad claims the oxidative dyeing of hair with indolines with the aid of, inter alia, hydrogen peroxide. The prior art relating to an iodide/hydrogen peroxide oxidizing system has been discussed above with respect to Lagrange claims 22 and 23." LOB 45.

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determination that Konrad is entitled to priority of the subject matter of Counts 2 and 3, Lagrange is not entitled to a patent containing claims 30-34 of Lagrange Reissue Application 08/676,491 designated to correspond to the counts.

### OTHER ISSUES

#### Konrad Contingent Preliminary Motion 8

Konrad (paper no. 64) moves under 37 CFR § 1.633(a) for judgment against Lagrange reissue claim 34 designated to correspond to Count 3 on the grounds that the claim is not patentable to Lagrange. Lagrange reissue claim 34 is designated to correspond to Count 3 by virtue of the fact that we granted, supra, Konrad's Preliminary Motion 7 under 37 CFR § 1.633(c)(3) to designate Lagrange reissue claim 34 as corresponding to Count 3. However, in view of the grant of that motion and that Konrad is entitled to priority of the subject matter of Count 3, Lagrange cannot be entitled to a patent containing reissue claim 34. Therefore, it is a moot issue whether or not Lagrange reissue claim 34 is otherwise patentable to Lagrange. Accordingly, Konrad Contingent Preliminary Motion 8 is MOOT.

#### Lagrange Motion to Suppress Evidence

Lagrange filed a motion to suppress evidence under 37 CFR § 1.656(h) (paper no. 95, filed February 2, 1998). Lagrange seeks to suppress Höffkes Declaration I (Konrad Exhibit 4) on the grounds that Hoffkes did not personally supervise the synthesis of the indolines identified in the declaration and therefore the results are inadmissible hearsay. An objection to the introduction of Hoffkes I was previously raised

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during cross-examination (KR 96-99). Konrad filed an opposition to this motion (paper no. 97, filed February 20, 1998) to which Lagrange filed a reply (paper no. 101, filed March 20, 1998). The motion is dismissed because we have not relied upon this Declaration in our decision.

Under other circumstances, the motion would have been denied to the extent that it is based on the contention that Hoffkes did not personally supervise the synthesis of C<sub>0</sub>, C<sub>1</sub> and C<sub>2</sub> dihydroxyindolines and therefore any results recorded by him comparing their dyeing ability is inadmissible hearsay. The argument, as we see it, is that Lagrange objects to Konrad's explanation of the behavior of chemicals they did not synthesize but were provided to them by another manufacturer (i.e., Bitterfield Chemical Company). Plainly, Konrad is not required to synthesize every chemical in their formulations. We agree with Konrad that Young v. Bullitt, 233 F.2d 347, 110 USPQ 55 (CCPA 1956) applies. "The question generally is whether, when all the circumstances are considered together, there is a reasonable certainty as to the identity of the product." Id. at 58. It is not required that the indolines be "commercial products produced in accordance with strict guidelines and quality control procedures employed in commercial operations" (Lagrange Reply, paper no. 101, p. 3). It is Lagrange's burden to show that it was not reasonable for one to characterize the materials Konrad received from Bitterfield as those indolines stipulated in Hoffkes I. We note that Lagrange did not question Hoffkes' assertion (KR 41) that a "Bitterfield Chemical Company" in "Bitterfield", Germany, existed at the time of the indoline synthesis (i.e., 1992), that Bitterfield was a manufacturer of indolines, and/or that Bitterfield had a relationship with Henkel to synthesize indolines. This is the type of



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information, if not provided, which would have raised questions about the identity of the alleged indolines and which might have helped Lagrange meet their burden in establishing inadmissible hearsay.

#### Konrad Motion to Suppress Evidence

Konrad filed a motion to suppress evidence under 37 CFR § 1.656(h) (paper no. 93, filed January 30, 1998). Konrad seeks to suppress 1) Lagrange Exhibit A to Konrad's Preliminary Statement and 2) Cotteret Declarations I-V. Lagrange filed an opposition to this motion (paper no. 98; filed February 27, 1998) to which Konrad filed a reply (paper no. 104; March 20, 1998).

The motion is dismissed to the extent that it seeks to suppress Lagrange Exhibit A because we have not relied on this exhibit in our decision.

The motion is moot with respect to suppressing the Cotteret declarations. The Cotteret declarations were considered with respect to Lagrange's motions but the motions were nevertheless denied.

JUDGMENT

Having decided all the issues properly raised by the parties in their briefs, we now enter judgment in this interference pursuant to our authority under 37 C.F.R. § 1.658(a).

With respect to the motions, we hold the following:

<u>Lagrange Preliminary Motion 2</u>	-	Denied
<u>Lagrange Preliminary Motion 3</u>	-	Denied
<u>Lagrange Motion to Suppress</u>	-	Dismissed
<u>Konrad Preliminary Motion 5</u>	-	Granted
<u>Konrad Preliminary Motion 7</u>	-	Granted
<u>Konrad Preliminary Motion 8</u>	-	Moot
<u>Konrad Motion to Suppress</u>	-	Dismissed/Moot

Upon consideration of the record, and for the reasons given herein, it is

ORDERED that judgment on priority as to Count 1 is awarded against junior party, Lagrange.

FURTHER ORDERED that judgment on priority as to Count 1 is awarded in favor of senior party, Konrad.

FURTHER ORDERED that judgment on priority as to Count 2 is awarded against junior party, Lagrange.

FURTHER ORDERED that judgment on priority as to Count 2 is awarded in favor of senior party, Konrad.

FURTHER ORDERED that judgment on priority as to Count 3 is awarded against junior party, Lagrange.

FURTHER ORDERED that judgment on priority as to Count 3 is awarded in favor of senior party, Konrad.

FURTHER ORDERED that, on the record before the Board of Patent Appeals and Interferences, junior party Lagrange is not entitled to a patent containing claims 1-

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26 and 29-34 of reissue application 08/676,491, filed July 8, 1996, and are not entitled to their patent containing claims 1-29 of application 07/707,130, filed May 31, 1991, now U.S. Patent 5,178,637.

FURTHER ORDERED that, on the record before the Board of Patent Appeals and Interferences, senior party Konrad is entitled to claims 1-14 of application 07/949,851, filed November 19, 1992.

FURTHER ORDERED that if there is any settlement agreement which has not been filed, then attention is directed to 35 U.S.C. § 135 and 37 CFR § 1.661.

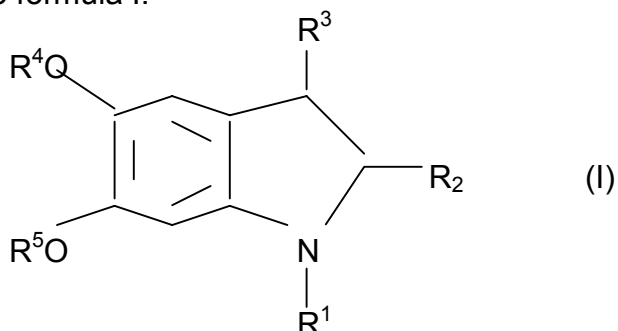
Lagrange Reissue application 08/676,491 will be forwarded to the Examiner in charge for further prosecution not inconsistent with this decision.

RICHARD E. SCHAFER	)	
Administrative Patent Judge	)	
	)	BOARD OF PATENT
	)	APPEALS
	)	AND
	)	INTERFERENCES
TEDDY S. GRON	)	
Administrative Patent Judge	)	
	)	
	)	
HUBERT C. LORIN	)	
Administrative Patent Judge	)	

APPENDIX 1

Claims 1-14 of Konrad Application 07/949,851:

1. A process for oxidative dyeing of keratin fibers by contacting said keratin fibers with a dyeing composition comprising a carrier and indolines, or salts of indolines, corresponding to formula I:

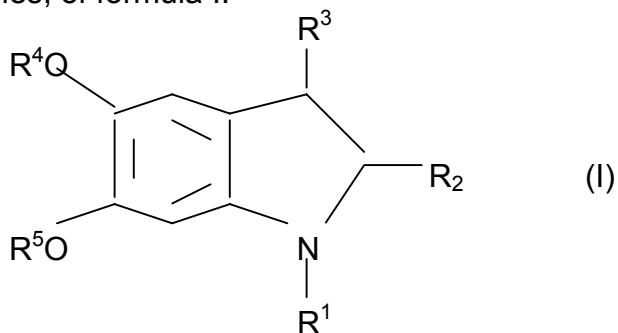


in which  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$  independently of one another represent hydrogen or  $C_{1-4}$  alkyl groups, or  $R^4$  and  $R^5$  together with the oxygen atoms to which they are attached may represent an alkylenedioxy group containing 1 to 4 carbon atoms, and causing oxidation of said dye-ing composition while it is in contact with said keratin fibers.

2. A process as claimed in claim 1, wherein, in formula I, the groups  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$  are hydrogen, except that one of the groups  $R^1$ ,  $R^2$ , and  $R^3$  may be a methyl group.

3. A process as claimed in claim 2, wherein the indolines corresponding to formula I or salts thereof are used as color modifiers in oxidation hair dyes containing other aromatic or heterocyclic amino primary intermediate compounds.

4. Hair dyes comprising oxidation dye precursors in a carrier, wherein indolines, or salts of indolines, of formula I:



in which  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$  independently of one another represent hydrogen or  $C_{1-4}$  alkyl groups, or  $R^4$  and  $R^5$  together with the oxygen atoms to which they

are attached may represent an alkylendioxy group containing 1 to 4 carbon atoms are present in a quantity of 0.1 to 20 millimoles per 100g of hair dye as oxidation dye precursors and the carrier is a gel containing 1 to 20% by weight of a soap or an oil-in-water emulsion containing 1 to 25% by weight of a fatty component and 0.5 to 30% by weight of an emulsifier from the group of anionic, nonionic, cationic, or ampholytic surfactants.

5. Hair dyes as claimed in claim 4, additionally comprising other aromatic or heterocyclic amino primary intermediate compounds.

6. Oxidation hair dyes as claimed in claim 5, wherein the indolines correspond to formula I when the groups  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$  are hydrogen, except that one of the groups  $R^1$ ,  $R^2$ , and  $R^3$  may be a methyl group.

7. Oxidation hair dyes as claimed in claim 4, wherein the indolines correspond to formula I when the groups  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$  are hydrogen, except that one of the groups  $R^1$ ,  $R^2$ , and  $R^3$  may be a methyl group.

8. A process as claimed in claim 1, wherein the indolines corresponding to formula I or salts thereof are used as color modifiers in oxidation hair dyes containing other aromatic or heterocyclic amino primary intermediate compounds.

9. A process as claimed in claim 8, wherein indolines of formula I or salts thereof are present in a quantity of 0.1 to 20 millimoles per 100g of hair dye as oxidation dye precursors and the carrier is a gel containing 1 to 20% by weight of a soap or an oil-in-water emulsion containing 1 to 25% by weight of a fatty component and 0.5 to 30% by weight of an emulsifier from the group of anionic, nonionic, cationic, or ampholytic surfactants.

10. A process as claimed in claim 3, wherein indolines of formula I or salts thereof are present in a quantity of 0.1 to 20 millimoles per 100g of hair dye as oxidation dye precursors and the carrier is a gel containing 1 to 20% by weight of a soap or an oil-in-water emulsion containing 1 to 25% by weight of a fatty component and 0.5 to 30% by weight of an emulsifier from the group of anionic, nonionic, cationic, or ampholytic surfactants.

11. A process as claimed in claim 2, wherein indolines of formula I or salts thereof are present in a quantity of 0.1 to 20 millimoles per 100g of hair dye as oxidation dye precursors and the carrier is a gel containing 1 to 20% by weight of a soap or an oil-in-water emulsion containing 1 to 25% by weight of a fatty component and 0.5 to 30% by weight of an emulsifier from the group of anionic, nonionic, cationic, or ampholytic surfactants.

12. A process as claimed in claim 1, wherein indolines of formula I or salts thereof are present in a quantity of 0.1 to 20 millimoles per 100g of hair dye as

oxidation dye precursors and the carrier is a gel containing 1 to 20% by weight of a soap or an oil-in-water emulsion containing 1 to 25% by weight of a fatty component and 0.5 to 30% by weight of an emulsifier from the group of anionic, nonionic, cationic, or ampholytic surfactants.

13. A process according to claim 1, wherein the oxidation of said dyeing composition occurs with the aid of a chemical oxidizing agent selected from the group consisting of:

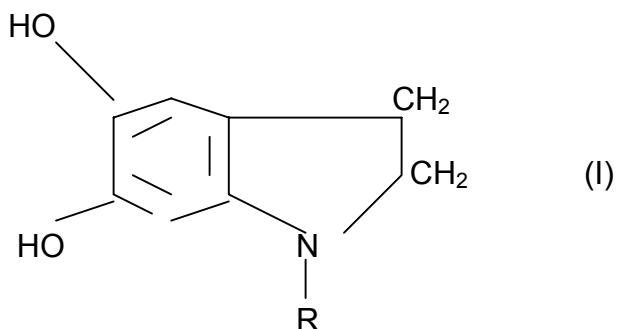
- (i) hydrogen peroxide
- (ii) hydrogen peroxide adducts with urea, melamine, or sodium borate
- (iii) dispersions of potassium or ammonium peroxydisulfate; and
- (iv) periodates.

14. A process according to claim 1, wherein the chemical oxidizing agent consists of water soluble periodates.

APPENDIX 2

Claims 1-29 of Lagrange Patent 5,178,637:

1. A tinctorial composition useful for dyeing keratinous fibres, in particular human keratinous fibers, comprising from 0.01 to 8% by weight, relative to the total weight of the composition, of at least one 5,6-dihydroxyindoline corresponding to the formula (I):



in which R represents a hydrogen atom or a C<sub>1</sub>-C<sub>4</sub> alkyl group, or an acid addition salt thereof in a medium suitable for dyeing.

2. A composition according to claim 1, wherein the 5,6-dihydroxyindoline is present in the composition in proportions of between 0.03 and 5% by weight relative to the total weight of the composition.
3. A composition according to claim 1, wherein the medium suitable for dyeing is an aqueous medium of water or a water/solvent mixture.
4. A composition according to claim 3, wherein the solvent is ethyl alcohol, propyl alcohol, isopropyl alcohol, tert-butyl alcohol, ethylene glycol, ethylene glycol monomethyl ether, ethylene glycol monoethyl ether, ethylene glycol monobutyl ether, ethylene glycol monoethyl ether acetate, propylene glycol, propylene glycol monomethyl ether, dipropylene glycol monomethyl ether or methyl lactate.
5. A composition according to claim 1, wherein the composition contains a fatty amide, anionic, cationic, nonionic or amphoteric surfactant, or a mixture thereof, thickener, perfume, sequestering agent, film-forming agent, treatment agent, dispersing agent, conditioner, preservative, opacifying agent or agent for swelling keratinous fibre, or a mixture thereof.
6. A composition according to claim 1, wherein the pH of the composition is between 3 and 12.

7. A method for dyeing keratinous fibres, in particular human keratinous fibres, wherein at least one composition as defined in claim 4 is applied to these fibres, this composition is kept in contact with the fibres for a period sufficient to develop a colour, either in air or with the aid of an oxidizing system, and wherein the fibres are then rinsed.
8. A method according to claim 7, wherein the colour is allowed to develop in contact with air without adding an external oxidizing agent.
9. A method according to claim 7, wherein the at least one composition as defined in claim 1 is identified as composition (A) and the colour is developed with the aid of a chemical oxidizing system consisting of:
  - (i) iodide ions and hydrogen peroxide, the composition (A) additionally containing, in this case, either (a) iodide ions or (b) hydrogen peroxide and the application of the composition (A) being preceded or followed by the application of a composition (B) which contains, in a medium appropriate for dyeing, either:
    - (a) hydrogen peroxide at a pH of between 2 and 12 when the composition (A) contains iodide ions, or
    - (b) iodide ions at a pH of between 3 and 11, when the composition (A) contains hydrogen peroxide;
  - (ii) nitrite, the application of the composition (A) being followed by the application of an aqueous composition (B) having an acid pH, the composition (A) or the composition (B) containing at least one nitrite;
  - (iii) oxidant comprising hydrogen peroxide, periodic acid or a water-soluble salt thereof, sodium hypochlorite, chloramine T, chloramine B, potassium ferricyanide, silver oxide, Fenton's reagent, lead(IV) oxide, caesium sulphate or ammonium persulphate; the oxidant being present in the composition (A) or being applied simultaneously or sequentially by means of a composition (B) containing it in a medium appropriate for dyeing;
  - (iv) metal anions comprising permanganate or dichromate, the oxidising agent being applied by means of an aqueous composition (B), at a pH of 2 to 10, before application of the composition (A);
  - (v) salt of a metal of groups 3 to 8 of the periodic table, the metal salt being applied in a separate step by means of a composition (B) containing the salt in a medium appropriate for dyeing;
  - (vi) rare-earth salt, the rare-earth salt being applied by means of a composition containing the salt in a medium appropriate for dyeing, the composition (B) being applied before or after the application of the composition (B) being applied before or after the application of the composition (A); and
  - (vii) a quinone derivative comprising an ortho- or para- benzoquinone, an ortho- or para-benzoquinone monoimine or diimine, a 1,2- or 1,4-naphthoquinone, an ortho- or para-benzoquinone sulphonimide, an  $\alpha,\omega$ -alkylenebis-1,4-benzoquinone or a 1,2- or 1,4-naphthoquinone monoimine or



diimine, the 5,6-dihydroxyindoline of formula (I) and the quinone derivative being selected such that the difference in redox potential  $\Delta E$  between the redox potential  $E_i$  of the 5,6-dihydroxyindoline of formula (I) determined at pH 7 in a phosphate medium on a vitreous carbon electrode by means of voltammetry and the redox potential  $E_q$  of the quinone derivative determined at pH 7 in a phosphate medium by polarography on a mercury electrode relative to the saturated calomel electrode such that:

$$\Delta E = E_i - E_q \leq 320 \text{ millivolts};$$

the composition (B) being applied before or after the application of the composition (A).

10. A method according to claim 9, wherein composition (A) in combination with iodide ions is applied to the keratinous fibres, the application of the composition (A) being preceded or followed by the application of the composition (B) which contains hydrogen peroxide in a medium appropriate for dyeing.

11. A method according to claim 9, wherein at least one composition (A) in combination with hydrogen peroxide and having a pH of between 2 and 7 is applied to the keratinous fibres, the application of the composition (A) being preceded or followed by the application of the composition (B) which contains iodide ions in a medium appropriate for dyeing.

12. A method according to claim 10, wherein the iodide ions are present in the composition (A) or (B) in a proportion of between 0.007 and 4% by weight, expressed as I<sup>-</sup> ions, relative to the total weight of the composition (A) or (B).

13. A method according to claim 9, wherein composition (A) is applied to the keratinous fibres and an acid aqueous composition (B) is then applied, the composition (A) or the composition (B) containing at least one nitrite comprising alkali metal nitrite, alkaline-earth metal nitrite or ammonium nitrite or the nitrite of any other cosmetically acceptable cation, an organic nitrite derivative or a nitrite vector generating a nitrite of the type define above.

14. A method according to claim 13, wherein the nitrite is present in a proportion of between 0.02 and 1 mole/liter.

15. A method according to claim 9, wherein composition (B) containing, at a pH of between 2 and 10, a metal anion having a good affinity for keratin fibers and comprising permanganate or dichromate is applied to the keratinous fibres and, in a second step, the composition (A) is applied at a pH or between 4 and 10.

16. A method according to claim 15, wherein the permanganate or dichromate is used in an anion molality of higher than  $10^{-3}$  moles/1,000 g up to 1 mole/1,000 g and the compositions do not contain an organic agent having a reducing effect on the anions.

17. A method according to claim 9, wherein composition (A) is applied to the keratinous fibres and composition (B), containing a metal salt comprising a manganese, cobalt, iron, copper or silver salt, is applied before or after the composition (A).

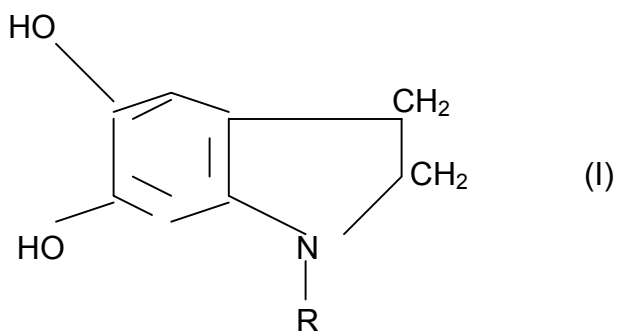
18. A method according to claim 17, wherein the metal salt is used in a proportion of between 0.01 and 2% by weight, expressed as metal ions, relative to the total weight of the composition. Corresponds to Count 3.

19. A method according to claim 9, wherein composition (A) is applied and, before or after this composition, composition (B) containing a rare-earth salt selected from the group consisting of a cerium, lanthanum, europium, gadolinium, ytterbium and dysprosium salt is applied.

20. A method according to claim 19, wherein the rare-earth salt is present in a proportion of between 0.1 and 8% by weight relative to the total weight of the composition.

21. A method according to claim 9, wherein a composition based on hydrogen peroxide is used as the oxidizing medium, the hydrogen peroxide content in the composition being between 1 and 40 volumes.

22. A multicomponent agent for dyeing keratinous fibres, in particular human keratinous fibres, comprising a first component consisting of a composition (A) containing a 5,6-dihydroxyindoline corresponding to formula (I):



in which R represents a hydrogen atom or a C<sub>1</sub>-C<sub>4</sub> alkyl group, or an acid addition salt thereof, and a second component consisting of a composition (B) which contains, in a medium appropriate for dyeing, either:

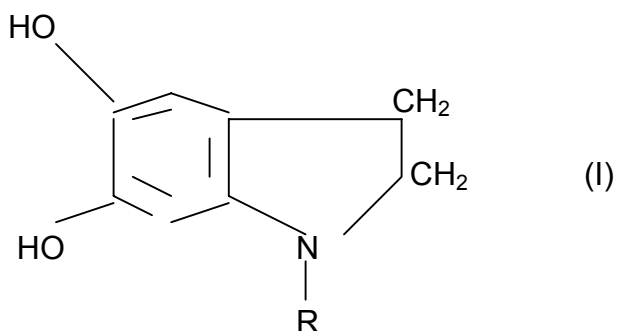
- (a) hydrogen peroxide at a pH of between 2 and 12 when the composition (A) contains iodide ions, or
- (b) iodide ions at a pH of between 3 and 11, when the composition (A) contains hydrogen peroxide.

23. A multicompartment device or "dyeing kit", comprising different compartments containing different components of the dyeing agent defined in claim 22.
24. A composition according to claim 1, wherein the salt is the hydrochloride or hydrobromide.
25. A composition according to claim 1, wherein 5,6-dihydroxyindoline is 5,6-dihydroxyindoline, 5,6-dihydroxyindoline hydrochloride, 5,6-dihydroxyindoline hydrobromide, N-ethyl-5,6-dihydroxyindoline, N-methyl-5,6-dihydroxyindoline or N-butyl-5,6-dihydroxyindoline.
26. A method according to claim 21, wherein the hydrogen peroxide content in the composition is between 2 and 10 volumes.
27. A tinctorial composition according to claim 1, wherein the 5,6-dihydroxyindoline is 5,6-dihydroxyindoline hydrochloride, an N-(C<sub>2</sub>-C<sub>4</sub>)alkyl-5,6-dihydroxyindoline or a salt of the latter.
28. New compound consisting of 5,6-dihydroxyindoline hydrobromide.
29. New compounds consisting of N-(C<sub>2</sub>-C<sub>4</sub>)alkyl-5,6-dihydroxyindolines and their salts.

APPENDIX 3

Claims 1-26, 29-34 of Lagrange Application 08/676,491 for Reissue of Lagrange Patent 5,178,637 (we have bracketted those portions deleted from the patent claims and shaded those portions that have been inserted):

1. A tinctorial composition useful for dyeing keratinous fibres, in particular human keratinous fibers, comprising from 0.01 to 8% by weight, relative to the total weight of the composition, of at least one 5,6-dihydroxyindoline corresponding to the formula (I):



in which R represents [a hydrogen atom or a C<sub>1</sub>-C<sub>4</sub>] C<sub>2</sub>-C<sub>4</sub> alkyl group, or an acid addition salt thereof in a medium suitable for dyeing.

2. A composition according to claim 1, wherein the 5,6-dihydroxyindoline is present in the composition in proportions of between 0.03 and 5% by weight relative to the total weight of the composition.
3. A composition according to claim 1, wherein the medium suitable for dyeing is an aqueous medium of water or a water/solvent mixture.
4. A composition according to claim 3, wherein the solvent is ethyl alcohol, propyl alcohol, isopropyl alcohol, tert-butyl alcohol, ethylene glycol, ethylene glycol monomethyl ether, ethylene glycol monoethyl ether, ethylene glycol monobutyl ether, ethylene glycol monoethyl ether acetate, propylene glycol, propylene glycol monomethyl ether, dipropylene glycol monomethyl ether or methyl lactate.
5. A composition according to claim 1, wherein the composition contains

a fatty amide, anionic, cationic, nonionic or amphoteric surfactant, or a mixture thereof, thickener, perfume, sequestering agent, film-forming agent, treatment agent, dispersing agent, conditioner, preservative, opacifying agent or agent for swelling keratinous fibre, or a mixture thereof.

6. A composition according to claim 1, wherein the pH of the composition is between 3 and 12.

7. A method for dyeing keratinous fibres, in particular human keratinous fibres, wherein at least one composition as defined in claim 4 is applied to these fibres, this composition is kept in contact with the fibres for a period sufficient to develop a colour, either in air or with the aid of an oxidizing system, and wherein the fibres are then rinsed.

8. A method according to claim 7, wherein the colour is allowed to develop in contact with air without adding an external oxidizing agent.

9. A method according to claim 7, wherein the at least one composition as defined in claim 1 is identified as composition (A) and the colour is developed with the aid of a chemical oxidising system consisting of:

- (i) iodide ions and hydrogen peroxide, the composition (A) additionally containing, in this case, either (a) iodide ions or (b) hydrogen peroxide and the application of the composition (A) being preceded or followed by the application of a composition (B) which contains, in a medium appropriate for dyeing, either:
  - (a) hydrogen peroxide at a pH of between 2 and 12 when the composition (A) contains iodide ions, or
  - (b) iodide ions at a pH of between 3 and 11, when the composition (A) contains hydrogen peroxide;
- (ii) nitrite, the application of the composition (A) being followed by the application of an aqueous composition (B) having an acid pH, the composition (A) or the composition (B) containing at least one nitrite;
- (iii) oxidant comprising hydrogen peroxide, periodic acid or a water-soluble salt thereof, sodium hypochlorite, chloramine T, chloramine B, potassium ferricyanide, silver oxide, Fenton's reagent, lead(IV) oxide, caesium sulphate or ammonium persulphate; the oxidant being present in the composition (A) or being applied simultaneously or sequentially by means of a composition (B) containing it in a medium appropriate for dyeing.
- (iv) metal anions comprising permanganate or dichromate, the oxidising agent being applied by means of an aqueous composition (B), at a pH of 2 to 10, before application of the composition (A);
- (v) salt of a metal of groups 3 to 8 of the periodic table, the metal salt being applied in a separate step by means of a composition (B) containing the salt in a medium appropriate for dyeing;
- (vi) rare-earth salt, the rare-earth salt being applied by means of a

composition containing the salt in a medium appropriate for dyeing, the composition (B) being applied before or after the application of the composition (A); and

- (vii) a quinone derivative comprising an ortho- or para- benzoquinone, an ortho- or para-benzoquinone monoimine or diimine, a 1,2- or 1,4-naphthoquinone, an ortho- or para-benzoquinone sulphonimide,  $\alpha,\omega$ -alkylenebis-1,4-benzoquinone or a 1,2- or 1,4-naphthoquinone monoimine or diimine, the 5,6-dihydroxyindoline of formula (I) and the quinone derivative being selected such that the difference in redox potential  $\Delta E$  between the redox potential  $E_1$  of the 5,6-dihydroxyindoline of formula (I) determined at pH 7 in a phosphate medium on a vitreous carbon electrode by means of voltammetry and the redox potential  $E_{\text{sub.q}}$  of the quinone derivative determined at pH 7 in a phosphate medium by polarography on a mercury electrode relative to the saturated calomel electrode such that:

$$\Delta E = E_i - E_q \leq 320 \text{ millivolts};$$

the composition (B) being applied before or after the application of the composition (A).

10. A method according to claim 9, wherein composition (A) in combination with iodide ions is applied to the keratinous fibres, the application of the composition (A) being preceded or followed by the application of the composition (B) which contains hydrogen peroxide in a medium appropriate for dyeing.

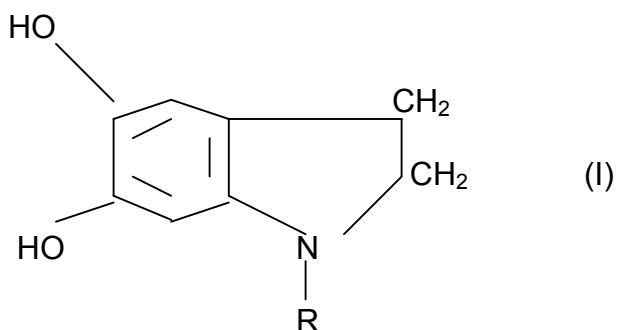
11. A method according to claim 9, wherein at least one composition (A) in combination with hydrogen peroxide and having a pH of between 2 and 7 is applied to the keratinous fibres, the application of the composition (A) being preceded or followed by the application of the composition (B) which contains iodide ions in a medium appropriate for dyeing.

12. A method according to claim 10, wherein the iodide ions are present in the composition (A) or (B) in a proportion of between 0.007 and 4% by weight, expressed as  $I^-$  ions, relative to the total weight of the composition (A) or (B).

13. A method according to claim 9, wherein composition (A) is applied to the keratinous fibres and an acid aqueous composition (B) is then applied, the composition (A) or the composition (B) containing at least one nitrite comprising alkali metal nitrite, alkaline-earth metal nitrite or ammonium nitrite or the nitrite of any other cosmetically acceptable cation, an organic nitrite derivative or a nitrite vector generating a nitrite of the type define above.

14. A method according to claim 13, wherein the nitrite is present in a proportion of between 0.02 and 1 mole/liter.

15. A method according to claim 9, wherein composition (B) containing, at a pH of between 2 and 10, a metal anion having a good affinity for keratin fibers and comprising permanganate or dichromate is applied to the keratinous fibres and, in a second step, the composition (A) is applied at a pH or between 4 and 10.
16. A method according to claim 15, wherein the permanganate or dichromate is used in an anion molality of higher than  $10^{-3}$  moles/1,000 g up to 1 mole/1,000 g and the compositions do not contain an organic agent having a reducing effect on the anions.
17. A method according to claim 9, wherein composition (A) is applied to the keratinous fibres and composition (B), containing a metal salt comprising a manganese, cobalt, iron, copper or silver salt, is applied before or after the composition (A).
18. A method according to claim 17, wherein the metal salt is used in a proportion of between 0.01 and 2% by weight, expressed as metal ions, relative to the total weight of the composition.
19. A method according to claim 9, wherein composition (A) is applied and, before or after this composition, composition (B) containing a rare-earth salt selected from the group consisting of a cerium, lanthanum, europium, gadolinium, ytterbium and dysprosium salt is applied.
20. A method according to claim 19, wherein a the rare-earth salt is present in a proportion of between 0.1 and 8% by weight relative to the total weight of the composition.
21. method according to claim 9, wherein a composition based on hydrogen peroxide is used as the oxidizing medium, the hydrogen peroxide content in the composition being between 1 and 40 volumes.
22. A multicomponent agent for dyeing keratinous fibres, in particular human keratinous fibres, comprising a first component consisting of a composition (A) containing a 5,6-dihydroxyindoline corresponding to formula (I):



in which R represents a hydrogen atom or a C<sub>1</sub>-C<sub>4</sub> alkyl group, or an acid addition salt thereof, and a second component consisting of a composition (B) which contains, in a medium appropriate for dyeing, either:

- (a) hydrogen peroxide at a pH of between 2 and 12 when the composition (A) contains iodide ions, or
- (b) iodide ions at a pH of between 3 and 11, when the composition (A) contains hydrogen peroxide.

23. A multicompartment device or "dyeing kit", comprising different compartments containing different components of the dyeing agent defined in claim 22.

24. A composition according to claim 1, wherein the salt is the hydrochloride or hydrobromide.

25. A composition according to claim 1, wherein 5,6-dihydroxyindoline is [5,6-dihydroxyindoline, 5,6-dihydroxyindoline hydrochloride, 5,6-dihydroxyindoline hydrobromide,] N-ethyl-5,6-dihydroxyindoline, [N-methyl-5,6-dihydroxyindoline] or N-butyl-5,6-dihydroxyindoline.

26. A method according to claim 21, wherein the hydrogen peroxide content in the composition is between 2 and 10 volumes.

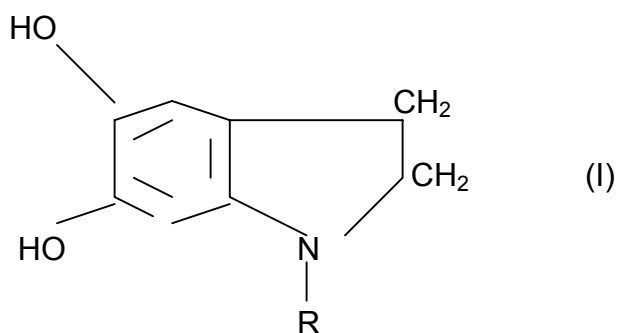
[27. A tinctorial composition according to claim 1, wherein the 5,6-dihydroxyindoline is 5,6-dihydroxyindoline hydrochloride, an N-(C<sub>2</sub>-C<sub>4</sub>)alkyl-5,6-dihydroxyindoline or a salt of the latter.]

[28. New compound consisting of 5,6-dihydroxyindoline hydrobromide.]

29. New compounds consisting of N-(C<sub>2</sub>-C<sub>4</sub>)alkyl-5,6-dihydroxyindolines and their salts.

30. A tinctorial composition useful for dyeing keratinous fibres, in particular human keratinous fibers, comprising from 0.01 to 8% by weight, relative to the total weight of the composition, of at least one 5,6-dihydroxyindoline corresponding to the formula (I):





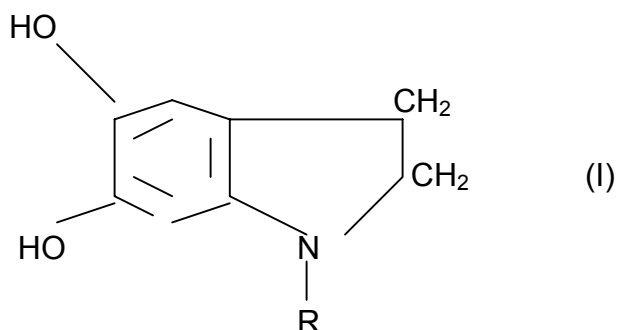
in which R represents a hydrogen atom or a C<sub>1</sub>-C<sub>4</sub> alkyl group, or an acid addition salt thereof in a medium suitable for dyeing wherein the medium suitable for dyeing is a water/solvent mixture and wherein the solvent of the water/solvent mixture is ethyl alcohol, propyl alcohol, isopropyl alcohol, tert-butyl alcohol, ethylene glycol, ethylene glycol monomethyl ether, ethylene glycol monoethyl ether, ethylene glycol monobutyl ether, ethylene glycol monoethyl ether acetate, propylene glycol, propylene glycol monomethyl ether, dipropylene glycol monomethyl ether or methyl lactate.

31. A composition according to claim 30 wherein the composition contains a cationic, nonionic or amphoteric surfactant or a mixture thereof, thickener, perfume, sequestering agent, film-forming agent, treatment agent, dispersing agent, conditioner, preservative, opacifying agent or agent for swelling keratinous fibre, or a mixture thereof.

32. A composition according to claim 30 wherein the salt is the hydrochloride or hydrobromide.

33. A composition according to claim 30 wherein 5,6-dihydroxyindoline is 5,6-dihydroxyindoline, 5,6-dihydroxyindoline hydrochloride, 5,6-dihydroxyindoline hydrobromide, N-ethyl-5,6-dihydroxyindoline, N-methyl-5,6-dihydroxyindoline or N-butyl-5,6-dihydroxyindoline.

34. A method for dyeing keratinous fibres, in particular human keratinous fibres, wherein at least one composition identified as (A) comprising from 0.01 to 8% by weight, relative to the total weight of the composition, of at least one 5,6-dihydroxyindoline corresponding to the formula (I):



in which R represents a hydrogen atom or a C<sub>1</sub>-C<sub>4</sub> alkyl group, or an acid addition salt thereof in a medium suitable for dyeing is applied to these fibres, this composition is kept in contact with the fibres for a period sufficient to develop a colour with the aid of a chemical oxidizing system, the chemical oxidising system consisting of:

- (i) iodide ions and hydrogen peroxide, the composition (A) additionally containing, in this case, either (a) iodide ions or (b) hydrogen peroxide and the application of the composition (A) being preceded or followed by the application of a composition (B) which contains, in a medium appropriate for dyeing, either:
  - (a) hydrogen peroxide at a pH of between 2 and 12 when the composition (A) contains iodide ions, or
  - (b) iodide ions at a pH of between 3 and 11, when the composition (A) contains hydrogen peroxide;
- (ii) salt of a metal of groups 3 to 8 of the periodic table, the metal salt being applied in a separate step by means of a composition (B) containing the salt in a medium appropriate for dyeing;
- (iii) a quinone derivative comprising an ortho- or para- benzoquinone, an ortho- or para-benzoquinone monoimine or diimine, a 1,2- or 1,4-naphthoquinone, an ortho- or para-benzoquinone sulphonimide, and  $\alpha,\omega$ -alkylenebis-1,4-benzoquinone or a 1,2- or 1,4-naphthoquinone monoimine or diimine, the 5,6-dihydroxyindoline of formula (I) and the quinone derivative being selected such that the difference in redox potential  $\Delta E$  between the redox potential  $E_1$  of the 5,6-dihydroxyindoline of formula (I) determined at pH 7 in a phosphate medium on a vitreous carbon electrode by means of voltammetry and the redox potential  $E_q$  of the quinone derivative determined at pH 7 in a phosphate medium by polarography on a mercury electrode relative to the saturated calomel electrode such that:

$$\Delta E = E_i - E_q \leq 320 \text{ millivolts;}$$

the composition (B) being applied before or after the application of the composition (A) and wherein the fibers are then rinsed.

APPENDIX 4

The Parties' Statements of the Issues (reproduced verbatim from the parties' briefs) are:

- Lagrange (see LB 10-11)
  - "The first issue before the Board at Final Hearing on which Lagrange has the burden of proof is whether claim 29 of Lagrange '637 and claims 1-21, 24-26 and 29 of the Lagrange reissue application correspond to a count, i.e., whether Lagrange has satisfied their burden of proof in showing that the Lagrange invention is not anticipated by the Konrad invention." [LI1]
  - "The second issue before the Board at Final Hearing on which Lagrange has the burden of proof is whether claim 29 of Lagrange '637 and claims 1-21, 24-26 and 29 of the Lagrange reissue application correspond to a count, i.e., whether Lagrange has satisfied its burden of proof in showing that the Lagrange invention is not obvious over the Konrad invention taken together with other prior art." [LI2]
- Konrad (see KB 1-3)
  - "Whether Lagrange's claim 22 or Lagrange's reissue claim 22 is obvious from Lagrange's claim 1 and/or Konrad's claims 4-7 in view of Grollier '500, Parent '404 and/or French '061 and therefore defines the same patentable invention as Count 2?" [KI1]
  - "Whether uptake,  $\Delta E$ , is a property to rely on to establish unexpected superior results when this property was not disclosed in either Lagrange's or Konrad's specifications?" [KI2]
  - "Whether the results in Mr. Cotteret's Declaration II actually establish unexpected superior results for Lagrange's claim 22?" [KI3]
  - "Whether Lagrange's claim 23 or reissue claim 23 is obvious from Lagrange's claim 1 and/or Konrad's claims 4-7 in view of Grollier '500, Parent '404 and/or French '061 and therefore defines the same patentable invention as Count 2?" [KI4]
  - "Whether Lagrange is now entitled to reissue claim 30, which is almost literally identical to Lagrange's original claim 4, when Lagrange never argued for separate patentability of Lagrange's original claim 4 under 37 CFR 1.633(c)(4)?" [KI5]
  - "Whether Lagrange's reissue claim 30 is obvious from Lagrange's claims 1 and 4 and/or Konrad's claims 4-7 in view of Goldemberg or Goldemberg et al. and therefore defines the same patentable invention as Count 2?" [KI6]
  - "Whether Lagrange has tested enough examples to establish unexpected superior results for reissue claim 30 when it has only tested the unsubstituted 5,6 dihydroxyindoline hydrobromide (claim 30 specifies unsubstituted or C1-C4 substituted 5,6-dihydroxyindoline in the free form or salt form) at one percent (claim 30 specifies from 0.01 to 8%) in a

water/solvent medium using only 5 different solvents (claim 30 specifies 13 solvents) at about 10 percent of the medium being solvent (claim 30 includes from 1 ppm solvent to over 99% solvent)?" [KI7]

- "Whether the results in Mr. Cotteret's Declaration II actually establish unexpected superior results for Lagrange's reissue claim 30?" [KI8]
- "Whether Lagrange's reissue claim 31, which is almost identical to Lagrange's original claim 5 which was designated as corresponding to Count 2, is obvious from Lagrange's claims 1, 4, 5 and 30 and/or Konrad's claims 4-7 and therefore defines the same patentable invention as Count 2?" [KI9]
- "Whether Lagrange's reissue claim 32, which is identical to Lagrange's original claim 24 except for dependencies, is obvious from Lagrange's claims 1, 4, 24 and 30 and/or Konrad's claims 4-7 and therefore defines the same patentable invention as Count 2?" [KI10]
- "Whether reissue claim 33 of Lagrange, which is identical to Lagrange's original claim 25 except for dependencies, is obvious from Lagrange's claims 1, 4, 25 and 30 and/or Konrad's claims 4-7 and therefore defines the same patentable invention as Count 2?" [KI11]
- "Whether Lagrange's reissue claim 34 is broader and defines the same invention as Lagrange's original claim 9 which have been designated as corresponding to Count 3?" [KI12]
- "Whether Lagrange's reissue claim 34 would be obvious over Lagrange's claim 9-21 and/or Konrad's claim 13 in view of Grollier '500, French '061, U.S. Patent 4,992,077, U.S. Patent 4,004,877, DE 2,028,818 and/or U.S. Patent 5,053,053 and therefore define the same invention as Count 3 of this interference?" [KI13]
- "Whether Lagrange's reissue claim 34 is broader in scope than Lagrange's patent claim 9 and has been improperly broadened since the reissue application was filed over two years after the issuance of the patent?" [KI14]

Patent Interference No. 103,548

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